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ORIGINAL ARTICLES.

THE RELATIONSHIP OF FOOD TO SCORBUTUS IN CHILDREN.

Read in the Section of Diseases of Children, at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY E. F. BRUSH, M.D.,

OF MT. VERNON, N. Y.

The question of scurvy in infancy is, I think, one of the phases of children's diseases that has been lost sight of very largely in the study of pediatrics. There is no doubt but that the disease exists in infancy to a greater extent than we are aware, or should infer from medical literature. There can be little doubt when your attention is called to the fact, but that you will agree that many of the cases reported as rickets and marasmus, should be classified as scorbutus. Dr. Northrup, of New York, read a paper on scorbutus last September, in Washington, before the Pediatrics Society, and I think much good will come from this paper, which was a very interesting and instructive one, calling as it does the attention of pediatricians to the fact that such a disease occurs in infancy, and that it is characterized by very nearly the same pathological phenomena as is the disease in adult life. Now as this affection in the adult is well recognized, and the cause pretty well understood, I think it would not be amiss for me to call attention to some of the conditions in adult life that stand in a causative relation to the development of scurvy, and then we can see how prone to the affection the artificially fed infant of to-day must be. Every living creature on earth, or in the water thereof, subsists on matter that was once alive, and all food with the exception of a few condiments has been living, growing matter at one time. I think it can be safely affirmed that man is the only animal who not only kills his food, but makes it absolutely dead and sterile before he consumes it for his nourishment. The old adage, "that God sends the food, but the devil sends the cook," means more than has been credited to the saying. It has always been supposed that the unpalatable preparation of food was the devilish cooks' work, but I believe the cook whom the devil has sent to mislead us is the chemist. With his retort and his balances, with his reagents and his surmises, he has led us to believe that God has failed to do his work properly by uniting the nutritive materials in a living form, and possessed with a vitality that the chemist knows nothing about. He has taken up a deal too much room, and made things altogether too complicated. The chemist would have us believe that man needs for his nourishment only so much nitrogenized and so much non-nitrogenized matter; that the material with which the Creator has united these, and the vitality with which he has endowed it, is totally unnecessary. According to the advanced ideas of the chemist, a little jar of Liebig's extract of beef is far better than ten pounds of meat in the form we find it in nature. Milk that has been skimmed, dried and powdered, and mixed with a little cocoa butter, is far better than fresh milk from the laboratory of nature as the Great Giver has allowed us to procure it. I remember seeing it stated in some standard work, that when the chemist had reached his goal, armies would be able to carry in a small vial all the nourishment that was needed for their support for several days, instead of the weighty load of bread and meat which they are now obliged to carry.

I tell you gentlemen, the chemist has tried to be too smart, and we have been duped by him in many instances. Every living creature requires for his proper nourishment some raw living food. Every young living creature needs living food. The mammalia all take it direct from the living fountain, and young feathered tribes are supplied by their parents with living creatures for food. Even the young fishes consume the living animalculæ, and man seems to be the only one of God's creatures who thinks he knows better. The artificially fed infant gets hisfood from the knowing chemist, or must according to the prevailing fashion, have all the life sterilized out of it, if he gets any as nature supplies it without the intervention of the chemist. I am positive that there is more in organism, and the vitality that holds it together, than is dreamed of in our advanced chemical knowledge.

We know that the sea-faring man, the soldier, the peasant of a famine stricken district, are all subject to scurvy when they are deprived of fresh living food, and any growing vegetable, animal matter or other material not dead, will cure the disease. Milk retains its anti-scorbutic qualities for a few hours, so does meat after the animal is subjected to what we call killing. I suppose the muscular response to electric excitability will indicate the point at which meat retains its vitality after the animal has been killed, and I think it is a well known fact that vitality is the anti-scorbutic quality of a food. Now if the absence of this quality for any given time from the nutritive material of an individual, produces such dire results as scurvy, it must follow that this principle is a necessary condition for proper nourishment, and the chemist's idea of proximate principles being the only necessity for nutriment, must be a fallacy. Of course neither the medical man nor the chemist knows what vitality is, but it is with us everywhere, and by reason of its possession, we ourselves live and move, and have our being, and every article of food we consume was gathered together, and formed into nutritive food for us by the living and growing quality of vitality. Is it unreasonable to suppose then, we can get from this quality some

sort of force that is necessary for our well being, and are we not depriving ourselves of some absolute necessity, when we eliminate every vestige of vitality from our daily bread? Since I have been possessed with this idea, I have observed several cases of simple dyspepsia recover completely by the use of live raw food. A few months ago, a patient came to me complaining of violent attacks of vertigo and temporary blindness. He had been losing flesh and strength for several months. I examined his urine, and found it to contain about 15 per cent. of albumen. He was directed to take nothing but living raw food—that is, milk not over four hours old, eggs laid but a few hours, raw oysters, raw clams, lettuce and other greens with no dressing, meat within a few hours after it was killed, eaten raw, apples, oranges and other raw fruits. No medicine except three drops of the tincture of nux vomica in water before meals as a placebo. At the end of fifty days the albumen had entirely disappeared. He had but few attacks of vertigo after he had the exclusive diet, and the attacks of temporary blindness never returned, and now after five months, he is in a better state of physical health than he had been before for years.

Now this one case proves very little, but it at least indicates that the diet must have had some influence in the man's recovery. I do not affirm that albuminuria always arises from the same cause, neither do I think any will affirm that defective nutrition is not one of the prominent etiological factors in Bright's disease, and if I am right in my deductions, one of the defects in our materia alimenteria is the absence of vitality; and if this is true regarding the adult, how much more must it be so with the luckless infant deprived of the normal living fountain which nature designed for its proper nutrition. I am firmly convinced that not only scorbutus and other serious affections arise from the absence of living food in the infant, but many of the weakly non-resisting babes succumb to disease, or live with more or less suffering, because of the absence of vitalized food.

One of the defects of the finite mind is its limit to be able to only harbor one idea at a time, and so when one man discovers a truth, he straightway imagines that he has solved all the mysteries of the science relating to the subject to which the discovered truth relates. I am willing to acknowledge that the vitality of a food is not its only requirement, but I am thoroughly convinced that it is one of the very important necessities to perfect nutrition. There can be little doubt that many children live who have been so improperly nourished (although fat) that life is more or less of a burden. A great deal of this may be due to their progenitors, their surroundings, and many other conditions, but some suffer by reason of improper food, and the method of its administration.

The French nation have as an executive officer in their scheme of government, a medical Health Officer. He has lately discovered that the death-rate in infants is so alarmingly large, that there is great danger of depeopling the nation, therefore he has issued an edict forbidding the use of the long tube nursing bottle in feeding infants, and I suppose he imagines that by this wise (?) law he will repeople France. If the death-rate could only be lowered by so simple an edict, our occupation would be gone; but we know that there are many other conditions, graver, more important and serious, than simply the form of a nursing bottle. There are very many things for us to find out before we know it all, but one fact I feel sure of, that the constant use of dead food with an infant is wrong. There is no greater field for the pediatrician, than the study of infant feeding. We must exclude from our councils, absolutely, the patent baby food manufacturer, and study how we can get a full supply of fresh, raw, living food to the unlucky infant who has to submit to an artificial diet, and then from the knowledge we are now in possession of, we will know that we are guarding the young, at least, from the danger of scurvy, and perhaps greater evils.

ACUTE MENINGITIS, WITH SPECIAL REFERENCE TO ITS TREATMENT.

Read in the Section of Diseases of Children, at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY GEORGE N. HIGHLEY, M.D.,
OF CONSHOHOCKEN, PA.

The differentiation of diseases of the membranes of the brain has been a slow and difficult process. At one time all were regarded as varieties of hydrocephalus; later as forms of tubercular inflammation; and there is much diversity of opinion among modern writers and investigators. But our present knowledge of these affections must still be more or less speculative. This is particularly true of their etiology.

Of simple acute meningitis we know nothing definite as to its cause; its early diagnosis is difficult, and its usual treatment very disappointing. Indeed, so fatal is the disease that physicians are apt to doubt their diagnosis in cases that recover.

The object of this paper is to urge the importance of early recognition and prompt active treatment in this by no means rare disease of childhood.

I will consider only primary simple, acute meningitis, apart from its existence in connection with any preëxisting trouble, for in the latter case if the antecedent affection be of little consequence, it need not be considered in the treatment; and if on the other hand it be serious and grave in character, its management, like the treatment of tubercular meningitis, brings up a larger question than is contemplated in the scope of this paper.

What is acute meningitis?

It may be defined as an inflammation of one or more of the membranes covering the brain. In the simple, not tubercular, meningitis of childhood it is the pia mater, or inner membrane, which is usually affected. On this account Huguenin has called it leptomeningitis, a nomenclature which has been followed by other writers.

Inflammation has some common characters which are constantly present no matter where the disease may be situated. These are: hyperæmia with increased arterial tension, followed by exudation into the tissues of certain constituents of the blood; alteration of structure and of function; increased cellular activity. Accompanying these processes, and as a result of them, there is elevation of temperature, swelling and pain.

The course of inflammation is much modified by its location and the character of the affected part—thus when the disease affects connective tissue the tendency is to the formation of pus; when serous membranes are involved there is likely to be dropsical

effusion; and in all affected organs and tissues in which there is a special function, that function is either suspended or greatly exaggerated and perverted. In inflammation of the pia mater we have therefore practically an inflammation of a serous membrane which produces disturbances of the complex cerebral functions and finally, if it continues, their complete cessation.

The cause of the disease in the majority of cases cannot be ascertained; it is indeed doubtful if it can be definitely determined in any case. Rigid investigation into the etiology of my own cases has been rather barren of results. Exposure to excessive heat (hot sun's rays), to sudden changes of temperature—in fact to all the conditions and influences which are supposed to produce inflammations in other parts of the body, may possibly produce the one in question.

The symptoms of acute meningitis are often not clearly defined in the early stage of the disease. It is not unusual to hear of cases being treated for "malaria" or for some other affection until the progress of the disease sets forth in unmistakable signs its true nature. Too often, then, has the golden opportunity passed for arresting it, and the physician finds it his painful duty to tell the friends of the little patient the true character of the affection and of its gloomy prognosis.

Is early recognition possible? Often it is true the physician does not see the case until considerable progress has been made, but if the disease can be detected during the stage of congestion, and before exudation has commenced, there are opportunities for treatment which if taken advantage of, may mitigate the force of the attack or completely arrest it. One of the earliest symptoms of the malady is vomiting—persistent vomiting which cannot be controlled by the usual remedies. It is present in nearly all cases and should excite suspicion whenever encountered. Preceding it, in a large number of cases, there is a disposition on the part of the child to be dull and languid, lying about much of the time; or on the other hand to be fretful and peevish, shrinking from the glare of strong light, restless at night, starting and crying out in its sleep. We have thus two varieties of symptoms, produced in the one case by hyperæmic pressure upon the cerebral centers, and in the other by irritation of those centers. In the latter class of cases, convulsions are not infrequently the first sign of the approaching disease. With that class, too, pain in the head is a prominent and persistent symptom. In all cases the pulse-rate is at first increased and then lessened, and again becomes rapid should the disease tend to a fatal issue. Pupils at first contracted; later widely dilated—temperature above normal, never high. Not to dwell in detail too long upon the symptoms of the disease, I beg to recall to your minds one more most valuable sign, and that is the character of the respiration. Slow shallow breathing with at intervals a long-drawn inspiration, is I think pathognomonic of the presence of the malady. It is difficult to observe the full phenomena of what is known as the Cheyne-Stokes respiration, but suspirations are almost invariably present.

These symptoms are present in the early stage of meningitis in varying proportions; some of them being prominent in one case and absent in another. In a few cases there are alternate periods of cerebral excitement and of lowered function of the brain centers. Should the inflammation go on unchecked, dropsical effusion soon begins in all cases, and the symptoms then are those of brain compression—pallid skin, enlarged veins, dilated pupils, slow pulse, drowsiness, deepening into coma, from which it is difficult to arouse the child. This condition may be changed to one of renewed irritation for a brief period, but continued coma is characteristic of this stage of the disease. It is doubtful if recovery has ever occurred after the period of dropsical effusion has arrived.

Is there any remedy for this most fatal malady? Can anything be done to stay the hand of this death-dealing disease? If we turn to our modern text books for an answer, we are deeply disappointed to find not a single remedy recommended that can be given with any assurance of success. Yet surely something ought to be done. To see a child, previously healthy and strong, suddenly stricken with a disease that must shortly destroy it, if there be no means of relief, is indeed a sad and serious thing. It certainly ought not to be allowed to go on without a strong effort being made to arrest it.

Fortunately there is a remedy which, it rightly used, will in the large majority of cases prove successful. I refer to venesection. Its use in the treatment of inflammation goes back to the dawn of medical history. From the earliest times it has been successfully employed in the management of this class of affections. Though at times temporarily thrown into disuse by gross abuse, its inherent value has kept it prominently in the foreground as a most potent means of treating this class of diseases. If we will but bear in mind the pathology of inflammations—a brief account of which I have endeavored to present to you—we can readily perceive the *rationale* of the remedy. In the first stage there is always congestion. Now there may perhaps be a congestion without inflammation; it is hard to conceive of an inflammation without congestion. The relation which they bear to each other is not yet definitely determined. It is probable that hyperæmia is merely a factor in the phenomenon of inflammation, and not its cause. Nevertheless, it is a most important factor, and the process cannot go on actively without it. Blood-letting blanches the congested tissues, relieves the pressure in the vessels and thus blocks the progress of the disease. No other remedy can do this so efficiently and with as little depressing effects as does this one.

The question at once comes to your minds, "Why is it that a remedy so long known and so often brought to the notice of the profession should not have received a more unanimous approval?" If the evidence of its value be so convincing to the few who have made use of it, why should not their testimony induce the many to at least give it a fair trial? Well, the majority of physicians are timid people. At least they are afraid of public opinion in general and their own patrons in particular. They do not like to incur the displeasure of the community in which they practice. Blood-letting seems to laymen a heroic measure and so they prefer to have "other things tried first." It does not appear to alter their opinion to know that after those "other things" have failed there is little use in trying anything else.

There is another reason why venesection has not been more generally adopted in the treatment of this class of affections; it is because most doctors follow

the advice of a few men who have enjoyed the reputation of being leaders in the profession. These leading lights do not advise blood-letting; it is true they have nothing else which they can offer with any assurance that it will be successful—still they do not recommend venesection. And "better," says the average doctor, "better to lose more patients while pursuing the practice of the teachers than to risk losing a few while using an unsound plan of treatment." For in the first instance they can always assure the friends of the unfortunate that they have followed the practice of the most eminent men in the country and hence nothing more could have been done. The measure of value of a remedy is not by whom and by what class of men is it used, but what is the success which follows its use.

Until some other and better means shall be brought forth, venesection must stand as the most reliable and the most successful treatment of meningitis and all other inflammatory affections. When and how shall it be performed? It is manifestly the duty of the doctor to do it at his first visit if the presence of meningitis seems reasonably probable. It is certainly far better to bleed a patient unnecessarily than to omit doing so when there is urgent need of it. How much blood may be taken? That of course will depend upon the age and condition of the patient. The amount must always be sufficient to stop the engorgement of blood in the affected part. A child of four years can readily lose five or six ounces; more is sometimes demanded, less is often sufficient. In every case if, after a lapse of thirty-six or forty-eight hours, there is no improvement or the symptoms seem more pronounced, the operation should be repeated; or else local blood-letting by means of leeches or cups should be resorted to. The value of local abstraction of blood depends entirely upon the amount of blood taken. It is of course equivalent to venesection when a like quantity has been obtained, though this is generally difficult to accomplish.

Second in importance only to blood-letting, in the treatment of meningitis, is the application of cold water to the head by means of cloths wrung out of ice-water. When changed frequently and constantly applied they are, I think, greatly superior to ice bags and a most valuable aid to venesection in the management of this affection. When ice bags are used, two at least are necessary and a sufficient quantity of water should cover the ice, so that the cold may be more evenly distributed. One of the bags may be placed under the head and the other over the superior part.

Of medicines little need be said. Their value in controlling inflammation is more than doubtful. Theoretically they do so, but practical proof of their efficiency is wanting. To attempt to accomplish this result by the use of large doses of dangerous, depressing drugs, is surely a hazardous undertaking. The one indication for giving medicines is the relief of suffering. Headache, pains in the head, restlessness, etc., are best relieved by the bromides and small doses of morphia.

Let me now give you some practical proof of the value of the remedy. I will read you the history of three cases, which will be typical of many others, the first illustrating abstraction of blood by means of cups; the second by leeches; and the third by venesection and leeches.

Case 1.—Michael Feeley's child, aged two years, was taken ill October 25, 1888. Convulsion lasting nearly an hour. Saw the child shortly afterwards. It was still unconscious, pulse rapid, 120 to 125, pupils contracted, eyes turned upward with slight strabismus. After a few hours semi-consciousness returned. The little fellow lay languidly on his bed, his eyes half closed, but could easily be aroused. The next day (26th), there was no improvement. Pulse 120, respiration 28, temperature 100.5°. The peculiar breathing to which I have alluded was quite marked. At brief intervals there would be a long-drawn sigh (suspiration) followed by short incomplete respirations. The patient had vomited somewhat before being attacked with the convulsion. It occurred a few times on this and the following days. On the day of the convulsion I directed the use of cold water to the head and counter-irritation over pit of stomach. There being no improvement on the following day I applied cups over each temple, drawing about two ounces of blood. Ice bags were applied to base and fore part of cranium, they being partly filled with water in order to be more easily adapted to the shape of the skull. This was essentially the only treatment. After the cupping the child seemed somewhat better, and during the next two or three days a very gradual improvement took place. On the evening of the 29th symptoms of brain congestion again became marked. The cupping was repeated, a like quantity (two ounces) of blood being taken. Improvement once more set in though little change could be noticed for three or four days. The child was pale and became much emaciated. Gradual convalescence.

Case 2.—Andrew Fenelon's child, age two years. Was called to see it March 26, 1890. The mother told me that it had not been well for several days, the following symptoms being present: restlessness, peevishness, frequent attacks of vomiting, sensitiveness to strong light and no desire for food. When asleep it would often cry out or scream loudly, but would not rouse up when spoken to mildly. In addition to these symptoms, I found a rapid pulse, contracted pupils, pallid skin and irregular breathing. It was evident that I had a case of meningitis to deal with. I decided upon a good leeching as the best way to meet it. Three were applied, one to each temple and one back of left ear. The bleeding was allowed to continue for several hours, so that it is likely that at least three ounces of blood were removed. The vomiting now ceased, though the little one continued to be quite ill for one or two days; some improvement was then noticed. Child quieter, does not have any more screaming spells and takes a little food. On the fourth day after leeching it did not appear to be quite so well; lest urgent symptoms might again set in I directed the application of another leech, with the direction that its bleeding should be encouraged for some time. This was in the evening. The next morning the little patient was lying quiet, breathing easy and regular. Convalescence now continued slowly but without further interruption.

One more case illustrating the value of general blood-letting in this disease. To vary the evidence somewhat I will give you the history of a case that occurred in the practice of a neighboring physician—a man who through more than sixty years of active practice has had unparalleled success in the treatment of this class of affections.

The doctor was called to see Lizzie S., aged thirteen years, at midnight March 11, 1884. She had been suffering for about four hours with the most violent pain in the head, which made her scream out at short intervals. Vomiting occurred very often, pulse frequent and almost indistinct. Small doses of morphia with ten grs. bromide of potash were given every two hours. Next morning (12th), no improvement; patient vomited everything given her—even a small drink of water—face very pale, pulse rapid, could hardly be felt. Notwithstanding this apparently very weak circulation, the physician bled her at 6 P.M. eight ounces (8℥viij). At 9 P.M., three hours afterwards, he visited her again. There had been no more vomiting since the bleeding. Pulse still weak, face pallid. Ice-water cloths and ice bag had been applied to her head constantly since the beginning of the attack, and the patient repeatedly declared that they gave her much relief.

March 13, 8 A.M., pulse distinct at 80; face red, excessive pain in head, will not permit ice to be taken away from it even for a minute. At 2 P.M. these distressing symptoms still continued. Three large leeches were now applied to each temple. After being removed, the wounds were allowed to bleed for some time—until indeed she was as pale

as death. The physician was now somewhat alarmed, though he felt that the blood-letting had not been carried too far, gave her one-twenty-fourth gr. morphia and ten grs. bromide pot., to be repeated every two hours until pain was relieved. She received two doses.

March 14, 9 A.M., patient had had some sleep; still complains of head, though more comfortable than on preceding day. Morphia and bromide to be continued until relieved. 6 P.M. applied blister over whole forehead to relieve pain, which has continued. Patient's general condition seems to be decidedly improved.

March 15, 9 A.M. Pain in forehead much relieved. Slept well, pulse 88, skin not so pale. Medicines were ordered discontinued unless pain returned.

March 15, 9 A.M. Patient still improves, has commenced to take food (she took none whatever during these days of distress). Gave oil to move bowels. Applications of ice still continued because patient will not permit their removal.

March 17. Took away ice bags and directed cold water cloths to be used instead. Convalescence continued slowly and patient did not require further active treatment. On the 23d she said she felt very well, and was able to sit up a few days later. She made a good recovery.

OUGHT INFANTS TO BE WASHED DIRECTLY AFTER BIRTH?

Read in the Section of Diseases of Children, at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY FRANK S. PARSONS, M.D.,

OF NORTHAMPTON, MASS.

LECTURER ON DISEASES OF CHILDREN IN THE COLLEGE OF PHYSICIANS AND SURGEONS, BOSTON, MASS.

Doubtless most physicians find themselves confronted by this question nearly every week.

The dire results in some instances, where infants have been subjected to severe exposure to cold, during a prolonged process of this part of their toilet, would perhaps lead one to think a negative answer should be given. On the other hand, there are cases that have seemingly received the same treatment, and come out unscathed by any disease the etiology of which is credited to undue exposure to chilling influences.

There is, probably, no hygienic measure more tempting to a good nurse, than to arrange the toilet of the little one, making its body sweet and clean, as early as possible after birth.

If, as the custom is, we look to nature, as manifested in the lower animals, for a solution of this problem, we find that all the domestic, and so far as we are able to know the wild animals, wash their young directly after birth.

Of course there are many reasons why this fact, even though natural, can be no criterion to our treatment of the human race. The human mother cannot perform for her offspring such duties in the manner which the lower animals exhibit, nor would she be expected to were it a practical, or even fashionable thing to do. Then, too, the young of the lower animals being more thickly covered with short hairs or fur, the process with them is more one of drying the already wetted surface, than any particular desire for cleanliness. It is a natural instinct, or desire, on the part of the mother, to promote a healthy reaction of the skin of her offspring, who, in a wet condition, has suddenly been transferred from a higher temperature to one considerably lower.

With the human infant there is a different natural arrangement. A child has little, practically no, protecting hair. At birth it is suddenly ushered from an aqueous solution of nearly 100° Fahrenheit, to an aerial temperature from 20° to 30° colder. In other words, it has quickly been surrounded by a cold wave.

Then, if the infant is fortunate, it is received into some warmed flannel or woolen garment, and allowed to rest until the mother is amply cared for.

Now, while a baby has no constitutional environments for warmth and protection from exposing draughts, as has the animal, yet nature does provide an element of protection, seemingly for this emergency.

This is the sebaceous material consisting of fatty matter, epithelial cells, and other detritus found in greater or less quantity on the skin of the newborn child. This, if allowed, owing to the presence of the fatty matter, would naturally protect the infant from the chilling influences of reduced temperature to a considerable degree, and of itself become exfoliated about the time the umbilical cord separates.

However, the average nurse is imbued with the idea that, as soon as her other duties are over, the infant must be immediately washed, and turns her attention towards depriving it of this protecting element, by the application of soap and water.

Personally, I do not so much object to the washing of an infant directly after birth, as the manner in which it is commonly performed.

I trust I may be pardoned for occupying your time in rehearsing this part of the infant's toilet, as it is commonly done, and with which you all must be familiar, but I wish it contrasted with the method I shall hereafter recommend.

The baby, uncovered from head to foot, lies in the nurse's lap; she takes a soft sponge or rag, and with soap of a varying degree of alkalinity, and water of more or less warmth, washes small areas of the child at a time, and dries it with a towel or cloth of a greater or less degree of softness, until all stains and sebaceous matter are removed.

By the time this process is accomplished, and especially in cold months, the child may be seen shivering, and a bluish cast appearing over the exposed surface of its body.

Then the navel is hurriedly dressed, the infant attired in more or less suitable robes, and placed in bed with its mother to get warm.

Such is the treatment of a large per cent. of the children of to-day, and such are the cases that, almost invariably, develop catarrhal conditions varying in severity from simple snuffles to bronchopneumonia, with all its attending dangers.

I will not weary you with statistical references to cases of bronchitis, and other catarrhal affections, traceable to the first bath of infancy as a cause, as you all, doubtless, have had large experience in that line.

The question, then, is one of true infant hygiene.

Should a newborn child be deprived of its natural protecting element? If so, what method should be employed to lessen the danger to the infant's health during the process?

If some little skirt with sleeves and hood could be contrived, made of some warm, unirritating material, such as canton flannel, in which the infant, after being quickly oiled with pure hog's lard, could be wrapped and allowed to remain four or five days, until it had become accustomed to the reduced temperature, and then properly washed, it would doubtless be a less exposing method of treatment.

This, however, will not suit the average mother,

who wants her infant sweet and clean, and attired in all the paraphernalia of its wardrobe immediately after birth, so that it may be shown to the interested friends of the family.

This being an inevitable fact, it remains for us to devise some method of washing infants with the least exposure to cold, and for this reason, I have for some time suggested the following plan of treatment:

When there exists a large amount of sebaceous matter, ordinary soap and water will not remove it, so in these cases I direct the child to be previously anointed with pure hog's lard, this being the best solvent of the white sebum.

Then the child is quickly returned to the temperature from which it originally came by immersing it, to its neck, in a tub of water, the temperature of which is 103° Fahrenheit, or thereabouts.

Then the child, supported on the arm of the nurse, is with her other hand, or by the aid of an assistant, washed underneath the surface of the water, using only a soft linen rag or old handkerchief, the hem of which has been removed, and the best Castile soap.

Although not absolutely necessary, it is better, if possible, to have a second tub of water, equal in temperature to the first, in which the child may be rinsed.

This being accomplished, which should not have occupied more than five or six minutes, the child is quickly placed in a warmed absorbing blanket, and with the hand on the outside of the garment thoroughly but gently rubbed.

Afterwards the baby should be removed and rolled in a second warm and dry blanket, and allowed to remain a couple of hours, after which it may be dressed in garments suitable for comfort and protection.

I have never seen an infant, who has been treated in this manner, contract catarrhal troubles from an early bath, or have aught but healthy looking skins.

Greater care should be employed with children of unhealthy parentage, not only in the manner of bathing, but also other hygienic surroundings, and I firmly believe we can, by a little judicious early management, prevent a large per cent. of infant mortality.

ECZEMA INFANTILE.

Read before the Section of Diseases of Children, at the forty-third annual meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY B. MERRILL RICKETTS, M.D.,
OF CINCINNATI, O.

I believe that the subject "Eczema Infantile" will be of greater interest to this Section than any of the cutaneous diseases met during the first five years of childhood. It is a very common disease and one for which the general practitioner is frequently consulted. Not, however, until many of the numerous household remedies have proven themselves of no avail.

I do not care, on this occasion, to discuss the pathology or the cause from a bacteriological stand point. Neither do I care to report any special case or class of cases; only to speak of the eczema of childhood and its treatment, that we may discuss the management which has been the simplest, most easily applied with the best results thus far obtained by the author. There is not any skin disease that is so aggravating to childhood. There are none more unsightly. Usually both the head and face are involved. There are a few, where the disease is pretty generally distributed over the entire body and extremities.

When this is so, the child presents a most pitiful spectacle. The itching and discomfort occasioned by this condition are very aggravating and are sometimes accompanied by the most severe convulsive movements. There is nothing that appeals to a man's sympathy so much as one of these unfortunate conditions. I have seen those in charge of these unfortunate children, utterly oblivious to the suffering that the child endures.

The causes seem many, but to my mind there is none so common as that of the excessive use of soap and water.

My experience has been that about 95 per cent. of these cases are due to this cause. The disease is not a respecter of persons, as it attacks the high and the low, the rich and the poor, and above all, the white skin races. The number of cases of this disease found among the dark skin races is proportionately very small. This perhaps, may be accounted for from the simple reason that the white skin is more delicate and easily soiled; hence the use of numerous cosmetics, which are so useless and injurious, and which are so extensively used. A clean faced child is the pride of every mother. She is lavish in the use of anything that will keep her child's face clean, usually the remedy that will remove the dirt the quickest. She uses these remedies more frequently with the thin, delicate skin of the child, than she does on the skin of her own face. The sebaceous glands should not exist if this law of extreme cleanliness holds good.

Nature is not responsible for children being reared in dirty atmospheres. These glands are for a purpose, namely to keep the skin constantly anointed with a fluid which protects the epithelium from becoming dry and fissured. That portion of the body which constantly should be anointed, is the one which is necessarily exposed to the wind, the rain, rays of the sun and dusts of various character, namely: the face and hands, which are forever exposed.

As the slime protects the epithelial structures of fish and mollusks, so does the sebaceous matter protect the cuticle of man. Birds anoint their feathers that they may be kept soft and pliable. Animals covered with hair, are likewise anointed by these glands, even the hairs themselves being supplied by oily secretion. The skin of the Mexican dog is rough, scaly and disagreeable to the touch. Not so with that of the hairy canine; his is oily and being so, enables him to endure more exposures to either the sun or rain, than his tropical ally. If we would but reflect, the cause of the disease, as a rule, could easily be determined, because having once been determined, the remedy is soon to be found. Not until mothers receive a certain degree of education in sanitary matters, can we expect a lessening in the number of these cases. At times the cause seems to be due to some nervous condition, while at other times there is indication that it is wholly local. The vesicular form, which is the most common, especially in infants, is obstinate and very trying to both the mother and child. After the disease has manifested itself, the child will begin to be irritable, restless, have loss

of weight and a depressed appearance in general. It may have diarrhœa or it may be constipated, or they may alternate each other. The skin is reddened in places, resembling erysipelas, with a laceration here and there, showing where the nails of the child have been brought into requisition to relieve the intense itching. Crusts may extend over the face, head and shoulders or the entire body. The temperature is usually from one-half to a degree above normal. The hair is matted together with a pustule here and there over the affected area. There are many times deep and extensive fissures, especially about the ears, nose and lips, these of themselves causing much pain and discomfort.

If the hands are involved, it is usually the backs and between the fingers that the disease is most extensive. My experience has been that the disease is more frequent during the summer months. Having satisfied myself that the use of soap and water is the cause of this disease, at least in a very large proportion, I have for several years been treating it from this stand point.

The management that I have adopted is as follows: The mother is prohibited from applying water in any form, especially soap and water. A solution of olive oil and carbolic acid in the proportion of one to fifty is applied several times during the day to the affected areas, as often as the child seems to suffer from the itching. She is instructed to use the oil lavishly and to wash the child's skin with it as though it were water. This can be easily done, removing all of the dirt, leaving the skin perfectly clean, if a silk handkerchief or old linen fabric be used. The use of tea or coffee and all stimulants is forbidden. Also all kinds of food that should not be given to children at this age.

The child is allowed to be in the sun and enjoy the out-door exercise, even though its skin should become dirty. The olive oil and carbolic acid will prevent itching, so that the child will not lacerate the skin by scratching. In this way the injured parts are allowed to become healed, while the oil softens the crusts and keeps them from being reformed. $\frac{1}{20}$ grain of calomel is given every two hours; this I usually continue for one or two months, varying in frequency as occasion may require. If, after the third or fourth day, the child does not improve rapidly, I use salicylic acid in the form of an ointment, 10 grs. to the ounce. This is applied frequently to to the diseased parts, and is I think, one of the most satifactory applications that can be made. I believe that I have used about all of the preparations that have been mentioned for this disease, but I have found none that gives greater satisfaction.

Usually I do not see such patients more than three or four times, as the recovery will be as rapid without as with me, if the mother is faithful in carrying out all instructions. I do not know in what way the calomel acts; I give it whether there is constipation or diarrhœa. Sometimes there will be from eight to a dozen stools each day; I do not pay any attention to this condition of the bowels unless the discharges give mercurial indication. If they do, I then discontinue its use until the stools become less in frequency and when they are again indicated. I was formally led to believe that the disease was occasioned by some alimentary disturbance, but I do not now so believe it to be. I do not believe that the benefit derived from the mercury is due to its action upon the alimentary tract. I do, however, to its action upon the system in general, perhaps in changing secretions which are acids to alkali. The serum exuded from these eczematous patches turns litmus paper red, at least this has been my experience. I think that the successful management of these cases rests in changing the secretion to neutral as I have had many cases make a rapid recovery by the administration of the calomel with the application of simple oil.

A NEW APPLIANCE FOR FRACTURED CLAVICLE.

Read before the Meeting of the National Association of Railway Surgeons, May 25, 1892.

BY JESSE HAWES, M.D.,
OF GREELEY, COL.

I present to you a new appliance to be used as a retentive apparatus in fracture of the clavicle.

Let me modestly state among my first assertions that the appliance probably is not the most valuable contribution that has been made to surgery in the past few years, but its efficiency, neatness, rapidity of application, comfort to the patient, and small cost to the surgeon, commends it in my judgment, formed after using it several years, as superior to any dressing generally known to the profession.

In my remarks I shall premise that a fracture of the clavicle has occurred, has been properly diagnosed, properly reduced, and that we seek the most perfect apparatus for retention.

This paper then will not be an essay upon one of the most frequent fractures of the body, it will not be a treatise upon the clavicle or scapula, or their muscular attachments. I accept the dictum of the majority of surgical writers that the object of a dressing should be to carry the shoulder joint upward and outward and backward.

Premising then that a correct diagnosis has been made, that we seek a dressing that can perform what surgeons have required, I shall ask you to look over with me some of the common appliances and methods, and note the objections that may justly be urged against them, and which in a great measure are obviated by the newer apparatus.

The objection to lying on the back is, that it is a most wearisome and tedious method to which no busy man or woman will submit if they have ever once heard of a method less confining.

Velpeau's dressing remains nicely in place—in a wood-cut only. True, men skilled in the use of silicate or gypsum, may make it a fairly stable and comfortable dressing, but the great majority of men who are called to dress fractures of the clavicle are not skilled in the use of silicate of sodium or gypsum. Ask any expert in the manipulation of plaster of Paris if my statement is not correct. Further, it cannot carry the shoulder upward and retain it there with the ease and comfort of the new dressing.

The objections to the figure of 8 bandage across the shoulders are, that it carries the shoulder backward only, not upward, not outward, that the sound shoulder, which is the point of fixation, is not fixed, but is decidedly mobile, that to be of value it must be taut—and if tight it is almost unendurable.

The shawl as proposed by Dr. Moore of Rochester, has nearly the same objections, and has an additional one that on account of the space occupied by

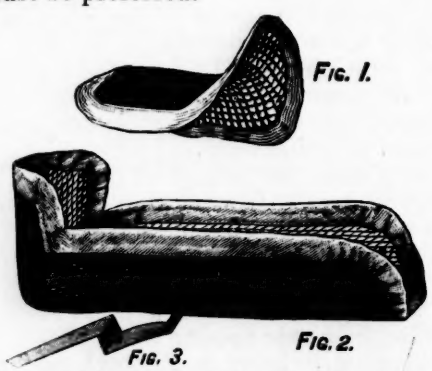
the shawl, the patient must go about the streets dressed in a great-coat.

The axillary pad, used by Bartlett, Fox, Hamilton and others, if used as a fulcrum endangers the brachial artery and nerves—if not used as a fulcrum is better replaced by a pledget of antiseptic absorbent cotton.

Hamilton, after calling attention to the apparatus of Fox, and those similar to it, and after adopting it as a model, declares that notwithstanding the improvements he has added "it is impossible to carry the shoulder out" and almost impossible to carry the shoulder back, and I will add that I cannot understand how it is possible to carry the shoulder well upward and retain it comfortably in that position, either by Fox's apparatus or by Hamilton's modification of it.

The principles and practice of Sayre's dressing are accepted by a large number of surgeons; the majority of surgical works give it an illustration, but it is a sticky, uncleanly, annoying dressing. Further, the weight of the arm and shoulder must be borne wholly upon the olecranon process, or to avoid this, a slit is cut in the adhesive dressing and the weight transferred in great part to the sharp edges surrounding the slit.

Be as careful as I could in dressing fractures after this method I have rarely failed to produce an inflamed elbow. This result perhaps is always the fault of the surgeon, but so long as surgeons shall be wanting in skill, to avoid this a dressing that can secure the best results of the Sayre without its annoyances, must be preferred.



There is a method of holding the shoulder upward, outward and backward by fastening a cross above the shoulders, of which one arm of the horizontal portion extends beyond the acromion process upon the side of fracture; from the outer end of this point of the cross, a strap extends into the axilla and is used for drawing the shoulder into the ideal position.

I have crucified several persons who were so unfortunate as to have a fractured clavicle, and to entrust themselves to me during my crucifying period, and I here in humility repent. I will crucify no more.

The cross, as I have seen it used, is an instrument of torture. It presses upon the axillary vessels and nerves, it stagnates circulation, it produces numbness. If patiently worn long enough, I believe its strap could tie off the arm as our fathers tied off hæmorrhoids.

The appliance I offer as a substitute for the above dressings consists of three parts, which for convenience of description I shall designate as the arm portion, Fig. 2; the shoulder shield, Fig. 1; and the clavicle depressor, Fig. 3.

The arm portion and the shoulder shield are made of wire screen, described by hardware men as one-quarter inch mesh No. 15 wire.

The clavicle depressor is made of ordinary sheet iron.

The arm portion for the average adult is made from a piece of screen about sixteen inches long and eight inches wide.

It should be so formed as to loosely encircle three-fourths of the bent arm from the wrist to a point four or five inches above the elbow.

The radial surface of the arm is not enclosed. The texture of the screen is such as to permit it to be molded quite easily into the form we desire by any ordinary tinsmith.

The arm piece should be deeply indented opposite the olecranon process and the condyles, to avoid all pressure at these points. The margins of the piece can be easily covered by ordinary rubber adhesive plaster.

A strong piece of webbing or belting or roller bandage is attached to the outside of the splint near the olecranon prominence. It should be so long that when the arm piece is applied to the arm, the webbing can pass obliquely across the back and over the opposite shoulder where it is buckled to its opposite end.

A similar piece of webbing is sewed to the distal or manual end. The arm piece is to be applied to the arm corresponding to the injured bone.

A soft padding of cotton should line the arm piece. The shoulder shield is placed on the shoulder opposite to the fracture, and should be molded to its contour. A soft pad should be beneath it when in position.

The diagnosis of fracture of clavicle having been made, the arm corresponding to the injured side is cradled in the arm portion of the dressing, then the belt sewed to its olecranon end is carried through the axilla, over the scapula over the opposite shoulder, protected by its shield, and is buckled to its opposite end.

Now grasp the wire appliance at its elbow and push the shoulder upward, outward, backward, and tighten the belt until it retains the shoulder in the position where placed.

Carry the manual belt through the axilla over the shield, tighten until the hand is brought near to the

shoulder, and in most cases this is all that will be necessary to do until the dressing is permanently removed and the patient discharged.

The olecranon strap will hold the shoulder upward and backward, the manual belt will, by drawing the elbow inward across the chest, make of the breast a fulcrum as safe as we can use or will need.

Indeed when the shoulder is carried upward and backward sufficiently, the fractured ends can be nicely approximated and there will be little desire of carrying the shoulder outward.

I have spoken of a clavicle depressor. In many cases it will not be necessary. In a few where it is aimed to secure the least possible deformity it will be of material advantage.

It is made of a piece of sheet iron an inch wide, and about six inches long, bent inward a little above its center sufficiently to reach over the clavicle, the upper end extending about two inches above the clavicle; this must be padded and a strip of adhesive plaster may be sewed to the padding.

To hold this in position and to depress the clavicle, I have resorted to the following device:

Sew a short strip of elastic webbing upon a strip of rubber adhesive plaster, sew a buckle to the webbing, hold the buckle opposite the clavicle, draw the plaster and webbing vertically downward directly over the depressor, stick the plaster to the skin of the chest. Apply a similar elastic and adhesive plaster (without the buckle) in the line of the depressor down over the scapula, buckle the two elastics over the depressor.

The amount of force necessary to depress the clavicle can be regulated as desired.

In presenting this appliance for your consideration, I desire to direct attention to what I regard as its chief merits.

By its use the ordinary adult shoulder can be carried upward and *retained permanently* and *comfortably* at an elevation of from one and one-half to two and one-half inches above its ordinary position.

Elevating the arm when the elbow is carried forward and inward carries the shoulder backward and slightly outward.

The posterior portion of the olecranon strap, in its course from the elbow to the opposite shoulder, passes over and binds down the scapula of the injured side. This is regarded as important by many surgeons.

The heavy wire indented as directed above, removes all pressure from the olecranon and condyles, and transfers it to a part where it is easily borne.

The belt carried from the base of the neck to the opposite shoulder is nearly vertical, and more certainly assures an upward lifting of the arm and shoulder than the Sayre appliance, which, lifting from the point of the shoulder, exerts its force more obliquely and therefore less efficiently.

The shoulder shield protects the tissues of the neck and shoulder from injurious or uncomfortable pressure.

A single arm piece and shield is suitable for a wide range in size of arms and shoulders. The form is easily changed.

There is no pressure upon the nerves and vessels of the axilla. The dressing is applied almost in a moment, and will not get misplaced. It is cleanly.

It is cheap. An arm piece, shield and depressor, without webbing and without the adhesive plaster on edges, should be furnished by the tinsmith at a cost not to exceed fifty cents.

SCARLET FEVER WITH NEPHRITIS IN PREGNANCY.

BY F. A. COGSWELL, M.D.,
of SWALEDALE, IA.

Scarlet fever occurring in the pregnant woman seems to be a pathological rarity which is accorded but scant space in every treatise which the writer of this paper has had opportunity to examine.

While the parturient woman is said to be very susceptible to infection during epidemics of scarlet fever, but very few cases of this disease occurring during the period of gestation are recorded.

The belief of the older obstetricians that pregnant women possessed immunity in a certain degree from acute infectious diseases having been abandoned by most writers of the present day, and thus establishing the rule that women during gestation are as liable to attacks of scarlet fever as at any other period of adult life, we are somewhat at a loss to account for the exceedingly small number of recorded cases.

Cazeaux never saw a case.

The American System of Obstetrics tells us that Olshausen collected 7 cases. Pregnancy was interrupted in four of these. In certain cases the disease was transmitted to the fœtus.

Quoting from the Cyclopedia of Obstetrics we find that scarlet fever appears to be the exception during pregnancy. When occurring it assumes a grave, malignant type, and terminates in abortion in the case of *every* woman, in *death* in the *majority*.

Austin Flint speaks of a case where the patient contracted the disease in the seventh month of pregnancy. Miscarriage occurred during the period of *incubation*. Parenchymatous nephritis occurred as a complication, and although the symptoms denoted great danger, the patient recovered and the child lived.

Parvin, in the Handbook of Medical Science says: "Scarlet fever is rarely observed in pregnancy and when it does occur is liable to interrupt its further progress, and is peculiarly fatal."

Jaggard in an article on "Acute Infectious Diseases in Pregnancy," says they are of the gravest clinical importance. Have a marked tendency to cause abortion with great peril to the mothers. Hæmorrhagic endometritis during infectious diseases is not uncommon in the non-gravid state and is more common in the pregnant condition."

He further says that during the progress of infectious diseases, death of the fœtus and consequent abortion may be caused.

First.—By the elevation of the maternal temperature which produces a disproportionate rise in the temperature of the unborn child. As one author says, "it dies of heat-stroke."

Second.—It may die from asphyxia caused by lowering of the maternal blood pressure, or by structural changes in the epithelium covering the fœtal placenta due to the condition of the maternal blood.

Third.—It may perish in consequence of infection with the specific poison of the disease, and

Fourth.—It may be expelled on account of thermic irritation of the uterine muscular fibre.

Bearing these causes in mind and referring to the

case reported by Flint the question arises as to what caused the miscarriage to occur during the period of incubation.

Spiegelberg says, "The eruptive fevers usually occur early in pregnancy, but the tendency to malignant forms with fatal results increases as pregnancy advances."

The experience which prompted the writing of this paper began on February 28, of the present year.

Mrs. C., æt. 25, in the latter part of the sixth month of her second pregnancy, had been suffering for 24 hours with tonsillitis which was epidemic at that time. Vomiting and diarrhœa had occurred, but were attributed to the fact of pregnancy. On the day before mentioned a brilliant, thick set scarlet rash was discovered which soon covered almost the entire body. Having heard it said during our college days that young doctors were famous for finding cases of rare diseases, an older practitioner, Dr. E. C. Miller, of Rockwell, was sent for, who unhesitatingly agreed in the diagnosis of scarlet fever, a malignant form of this disease being in the locality. The angina became very painful, and the rash was as typical as any the writer has ever seen. The temperature, however, never rose above 101½° F. at any period of observation. In the course of five or six days the rash disappeared, although the soreness and swelling of the throat persisted a few days longer. No other complications occurred up to this time, and not a particle of desquamation was discoverable at any time. The patient gradually returned to her apparent usual health and was soon up and about the house.

On returning home from a protracted country trip at 2 A.M., on March 15, the patient was found very sick with all the symptoms of acute nephritis. Chill, fever, pain in the back, aching of the body, feet and legs much swollen, and face so bloated as to be almost unrecognizable. Tongue broad, pale, flabby and covered with a white, pasty coat. Pulse 120. Urine nearly suppressed, dark brown in color, with a sooty deposit. Not over eight ounces was passed in the first 24 hours. Sp. gr. 1012, considerable albumen. By the third day urine was a clear blood red, slightly increased in quantity, sp. gr. same as before. Headache, with irritability, and dulness of mind, and dimness of vision now appeared as part of the clinical picture. This condition, with slight increase in amount of urinary discharge, sp. gr. varying from 1010 to 1012, color blood red, but growing paler, amount of albumen about as at first, persisted for ten days.

At this time patient began to improve in all respects and at last examination of urine on April 10, the quantity was normal, color natural and no albumen. Nearly every trace of swelling had disappeared. Tongue was red, full and round. No coating. There was a considerable diminution in body weight, also in size and firmness of muscular structures. A certain amount of dyspnœa, of which the patient had complained for some time prior to the attack of scarlet fever was now gone, and she said she had not felt in better health for years.

The treatment during the scarlet fever was of the usual kind. Diet of milk and beef juice.

During the nephritis, tinc. of iron, tinc. digitalis, potass. acet, saline cathartics, tonic doses of quinia and strychnia, and lactopeptine were administered. A few doses of morphia, bromides and chloral were given to quiet pain and restlessness.

During the first twelve days the diet was *exclusively milk*.

No symptoms of convulsions or abortion appeared.

During the interval between the fever and the onset of the nephritis the patient resumed her usual diet, and here a mistake was made, as the milk diet should have been continued until danger of kidney complications was past. The patient also should not have been allowed to expose herself to varying temperatures as she did. Urinary examinations should have been made and thus have anticipated in some degree the possible violent nephritic attack.

On June 8, the patient was normally delivered of an 8½ pound boy. Return to health has been rapid and satisfactory.

Among various queries which have arisen in the mind of the writer regarding this case, are the following: To what extent did the medicinal treatment contribute to the favorable termination of the nephritis; and, is the child subject to future scarlatinous infection?

PURULENT BRAIN DEPOSITS, AND PHLEBITIS AND THROMBOSIS OF THE CEREBRAL VEINS AND SINUSES FOLLOWING EAR DISEASE.

BY FRANK ALLPORT, M.D.,
OF MINNEAPOLIS, MINN.,
PROFESSOR OF CLINICAL OPHTHALMOLOGY AND OTOLOGY IN THE UNIVERSITY OF MINNESOTA, ETC.

(*Concluded from page 728.*)

The pus may be found outside of the dura-mater, and search should be made for it in this location. If found, and the dura appears to be thoroughly healthy, with no bulging or fluctuation, the operation may cease, and future developments awaited. But if pus is *not* found outside of the dura, or when found in this situation the dura appears unhealthy, or bulges or fluctuates, a free incision through it should be made, and the brain itself exposed. Pus may be found just inside the dura. If this proves to be the case, and the brain substance appears healthy, and is not bulging or fluctuating, operations may be suspended; but if pus is not found, or, if found, and the conditions just mentioned are present, and the operator is reasonably sure of his diagnosis, investigations must be pushed into the brain proper.

For exploring the brain, the aspirator, or exploring needle is to be preferred to the knife, and it should be introduced, and re-introduced, again and again, rather than to shove it along, from place to place, in hopes of finding pus. When the abscess is reached, the knife may be used to freely lay it open, at its most dependent portion. This cavity should not be syringed, a thorough opening, and good drainage being sufficient. A few strands of gut, should be placed into the abscess, as far as can be reached, and the end allowed to hang outside of the head. This can be shortened from day to day.

The dura-mater, and skin flaps, may be sutured at their upper portions, but enough space at the bottom allowed to remain open, to admit of good drainage.

Gut sutures should be employed for uniting the dura-mater, and iodoform dressings should be employed. Lanphear recommends that the head should be kept low after the operation, and it is needless to

say that the strictest antiseptic precautions should be maintained.

In case it becomes necessary to attack the cerebellum, the same directions are applicable, and the only question is to ascertain the best point for trephining. The opening should be made in the cerebellar fossa. This disease does not usually occur sporadically in the cerebellum, but spreads backwards, *to* the cerebellum from the usual focus of disease, viz.: the petrous and mastoid portions of the temporal bone, in consequence of which the abscess will generally be found in the anterior portion of the cerebellum. We must get at this portion of the brain, to do which the opening must be made one and a half inches back of the middle of the osseous meatus, and one-quarter of an inch below it. The opening, in other words, should be just back of the posterior border of the mastoid process. The lateral sinus would not be touched at this point, and the exploring needle should be directed upward, forward, and inward, to reach pus in the anterior portion of the lateral cerebellar lobe.

Before passing on to a consideration of phlebitis and thrombosis, I beg leave to submit the following tables, compiled from a study of the foregoing cases.

We first have a complete list of the symptoms and conditions occurring in the histories recorded in this article, and the frequency of their occurrence. They are as follows:

Deafness	11	Temperature high	8
Tinnitus aurium	3	Temperature medium	42
Tympanic necrosis	6	Temperature sub-normal	2
Tympanic granulations	6	Pulse high	6
Tympanic polypus	7	Pulse medium	33
Ear pain	35	Pulse sub-normal	2
Cholesteatoma	3	Sudden rise and fall of temp.	2
Swelling in front of ear	3	Chills	38
Swelling over ear	4	Facial paresis or paralysis	28
Swelling under ear	4	Paresis or paralysis, limbs	19
Mastoid swelled and tender	35	Spasms of limbs	7
Mastoid opened, spontaneously or otherwise	31	Spasms of facial muscle	4
Pus found in mastoid after opening	16	Paralysis of auditory nerve	2
Pus *not* found in mastoid after opening	7	Suspended breathing	1
Spontaneous mastoid opening	5	Incontinence of urine	3
Wilde's incision made	9	Facial veins enlarged	2
Opening into cranium made either spontaneously or otherwise	21	Optic neuritis	11
Pus found in cranium after opening	16	Amblyopia	5
Œdema of eyelids	1	Amaurosis	1
Pupils dilated	8	Syncope	2
Pupils contracted	8	Neuralgia of trigeminus	2
Pupils sluggish	2	Epilepsy	4
Nystagmus	1	Head pain	78
Ptosis	6	Diplopia	2
Exophthalmus	4	Strabismus	10
Delirium	36	Tender spine	1
Aphasia	8	Epistaxis	1
Stupor	18	Diarrhœa	3
Unconsciousness	17	Constipation	11
Coma	39	Pyæmia	4
Convulsions	22	Episthotonus	3
Insomnia	2	Meningitis	10
Somnolence	11	Nausea and vomiting	41
		Facial œdema	2
		Facial herpes	2
		Œdema of neck	3
		Maniacal	1
		Vertigo	22
		Fainting	1

I have given this itemized record of symptoms, as they have come to me in the reports. It would seem that the histories must have been given somewhat inaccurately, as I feel confident that many of the symptoms must have been of more frequent occurrence.

For instance: head pain, ear pain, deafness, tympanic necrosis, etc., must have been present in most of the cases, and yet it is not here recorded. On the contrary, some of the symptoms noted, were so seldom seen and apparently have so little direct bearing on the case, that they can hardly be classed in the symptomotology of intra-cranial disease following aural affections.

As to the results obtained in these cases, the record is as follows: Death, 158; recovery, 11. Total, 169.

We find that in these 169 cases, the skull has been opened spontaneously or otherwise, 21 times. All the 11 recoveries here recorded are contained in these 21 cases after the skull has been trephined, and the brain exposed. This shows a recovery of more than one-half of the cases thus operated. Considering our primitive knowledge of the subject, this record is good, and should encourage us to renewed efforts in the future, especially as operative interference is our only reasonable hope for lessening the mortality.

I will now beg leave to submit an itemized report of the various post-mortem appearances found, and the frequency of their occurrence. They are as follows:

Pus in the dura-mater	1
Pus in the pia-mater	7
Pus in the arachnoid	1
Pus in the superior petrosal sinus	2
Pus in the lateral sinus	5
Pus in the jugular sinus	2
Pus in the sigmoid sinus	3
Pus in the inferior cavernous sinus	2
Pus in the internal jugular vein	1
Pus in the lateral ventricle	4
Pus in the posterior occipital fossa	1
Pus in the middle cranial fossa	1
Pus in the 1st frontal fissure	1
Pus in the fissure of Rolando	1
Pus in the neck	2
Pus around chiasm	1
Pus over temporal lobe	1
Pus over medulla	4
Pus over pons	2
Pus between mastoid and dura-mater	1
Pus around spinal cord	1
Pus on surface of cerebellum	2
Pus between dura-mater and tegmen-tympani	3
Pus generally distributed over side of hemisphere	15
Pus on opposite side of brain to point of lesion	1
Pus in mastoid cells	15
Pus in labyrinth	1
Pus in cochlea	2
Pus in Fallopian canal	1
Pus in Eustachian tube	1
Pus in tensor tympanic canal	1
Pus patches over brain	2
Pus at base of brain	2
Pus at sella turcica	1
Pus on outer surface of frontal convolution	4
Purulent meningitis	11
Purulent bas. meningitis	3
Purulent lepto-meningitis	3
Purulent infiltration of orbit	1
Pus in semi-circular canals	3
Pus in tympanum	22
Pus in vestibule	4
Pus in internal ear	2
Pus in mastoid antrum	5
Pus on outer mastoid surface	2
Pus on outer squamous surface	1
Pus on outer sup. max. surface	1
Abscess in temporal lobe	40
Abscess in middle lobe	7
Abscess in occipital lobe	1
Abscess in frontal lobe	2
Abscess in cerebellar lobe	31
Abscess in pons	3
Abscess in crus cerebelli	1
Abscess in middle cranial fossa	1
Abscess in post. cranial fossa	2
Abscess in 1st frontal convolution	1

Abscess at apex of petrous	1
Abscess beneath dura-mater on outer surface of petrous	3
Diffuse sub-dural abscess	5
Abscess encapsulated	9
Abscess not encapsulated	2
Necrosis of upper part of petrous	10
Necrosis of inner surface of squamous	3
Necrosis of inner table of skull (general)	1
Necrosis of outer surface of mastoid	6
Necrosis of outer sarface of occip.	1
Necrosis of outer surface of sup. max	1
Necrosis of outer surface of frontal	1
Necrosis of outer surface of squamous	3
Necrosis of outer surface of parietal	2
Necrosis of inner surface of mastoid	5
Necrosis of mastoid antrum	6
Necrosis of mastoid cells	11
Necrosis of tympanum	21
Necrosis of tegmen-tympani	16
Necrosis of malleus	1
Necrosis of incus	1
Necrosis of meatus ex.	8
Necrosis of cribriform lamina.	1
Necrosis of jugular fossa	1
Necrosis of cochlea	1
Necrosis of vestibule	1
Necrosis of semi-circular canals.	3
Necrosis of pyramid	1
Necrosis of lateral sinus	5
Necrosis of bony wall of facial canal	1
Necrosis of vertebræ	2
Necrosis of sulcus for lateral sinus	2
Necrosis of bony wall of carotid canal	2
Necrotic opening through roof of mastoid antrum	2
Necrotic opening through squamous	1
Necrotic opening in bony wall of sulcus trans.	1
Necrotic opening in incis. santorini	1
Necrotic opening in sup. pet. sinus	1
Necrotic opening in wall of lateral sinus	2
Necrotic opening in parieto-occip. suture into cranial cavity	1
Necrotic opening in semi-circular canals	2
Necrotic opening in sigmoid flexure.	1
Necrotic opening in posterior wall of meatus	1
Necrotic opening between middle and internal ears.	2
Necrotic opening between internal ear and cranial cavity	2
Necrotic opening between mastoid antrum and sup. pet. sinus	1
Necrotic opening between mastoid antrum and sigmoid sinus	2
Necrotic opening in tegmen-tympani.	13
Necrotic opening through anterior surface of petrous.	1
Necrotic opening through lower tip of mastoid	1
Necrotic opening through inner mastoid plate to lat. sinus	5
Necrotic opening through outer mastoid plate.	1
Necrotic opening through inner mastoid plate.	1
Thrombosis in long. sinus.	8
Thrombosis in superior petrosal sinus.	9
Thrombosis in inf. petrosal sinus	2
Thrombosis in sigmoid sinus	1
Thrombosis in lateral sinus	8
Thrombosis in transverse sinus	8
Thrombosis in cavernous sinus	3
Thrombosis in carotid sinus	2
Thrombosis in sub. clav. vein	1
Thrombosis in internal jugular vein	9
Thrombosis in basilar vein	1
Thrombosis in ophthalmic vein	1
Thrombosis in bulb. ven. jug	1
Thrombosis in sigmoid flex	1
Thrombosis in circular sinus of Ridley	1
Phlebitis of lateral sinus	4
Phlebitis of trans. sinus	4
Phlebitis of superior petrosal sinus	1
Phlebits of ex. jug. vein	3
Phlebitis of mastoid em. vein	1
Phlebitis of ophthalmic veins	1
Dura-mater inflamed	11
Dura-mater perforated	8
Dura-mater adherent to bone	6
Arachnoid inflamed.	2
Pia-mater inflamed	12
Pachymeningitis	1
Bas. meningitis	7
Tuberc. meningitis	3
Meningitis	14
Lepto-meningitis	1
Brain membranes adherent to each other	3
Congestion of all meningeal veins.	1
Hernia of temporal lobe.	1
Gangrene of brain	2
Ossicles gone (all)	7
Malleous gone	6
Incus gone	8
Stapes gone	5
Drum-head gone	12
Drum-head perforated	3
Drum-head not perforated	1
Polypus in tympanum.	6
Cholesteatoma in tympanum.	4
Epithelioma in tympanum	1
Granulations in tympanum	3
Facial nerve destroyed	5
Facial nerve exposed and imbedded in pus	3
Auditory nerve exposed and imbedded in pus	1
Cholesteatoma of mastoid antrum	2
Granulations of mastoid antrum	2
Cholesteatoma of mastoid cells.	2
Mastoid cells sclerosed	5
Mastoid cells obliterated	3
Auricular glands enlarged	1
Sigmoid sinus obliterated	1
Bulb. portion of jug. vein obliterated	1
Mastoid em. vein obliterated	1
Chorda tymp. nerve obliterated	2
Trigeminus nerve obliterated	1
Atrophy of op. nerve	2
Frontal lobe œdematous and soft	1
Adhesions between brain and skull	4
Polypus of external meatus	1
Rupture of sigmoid sinus	1

Having now considered the subject of purulent accumulations within the cranial walls, resulting from otorrhœa, we will turn our attention to "Phlebitis and thrombosis of the cerebral veins and sinuses, caused by otorrhœa."

The two subjects of phlebitis and thrombosis may be considered under one head, as the symptoms and conditions are identical, excepting that the evidences of disease are more marked and decided in thrombosis than in phlebitis. The principal sinuses and veins affected are the lateral, cavernous, superior longitudinal, and superior and inferior petrosal sinuses, and the mastoid emissary and facial veins. The parts drained by these sinuses and veins show with tolerable distinctness the seat of the trouble. I will itemize the special local symptoms that follow phlebitis and thrombosis of each of these sinuses and veins.

If the lateral sinus is affected we will be apt to notice tenderness, œdema, and a corded feeling along the course of the internal juglar vein in its course towards the clavicle. Sometimes purulent degeneration of these parts wil be seen, while œdema of the parts in and about the external ear, dizziness, and staggering, may be expected.

By union of the two lateral sinuses at the internal occipital protuberance, the difficulty may extend from one sinus to the other, and thereby produce at the opposite side, the same condition existing at the original site of disease.

If the cavernous sinus is affected, we may anticipate œdema of the retina, poor vision, photophobia, œdema around the eye, and in the orbit; œdema of nostrils, forehead, eyelids, and nasal mucus membrane, epistaxis, perhaps exophthalmus, ptosis, sloughing of orbital tissue, paresis or paralysis of the abducens, oculo-motor and trigeminus nerves.

If the superior longitudinal sinus be affected, we may look for epistaxis, epilepsy, convulsions, and vascular engorgement in the cortical substance of the cerebrum, producing unconsciousness.

If the superior or inferior petrosal sinuses be affected, we may expect epistaxis, swelling of veins extending from the anterior fontanelle to the temples, epilepsy, engorgement of orbital vessels, poor vision, photophobia, paresis or paralysis of oculo-motor and abducens nerves, exophthalmus, ptosis, œdema of eye-lids, and sloughing of orbital tissues.

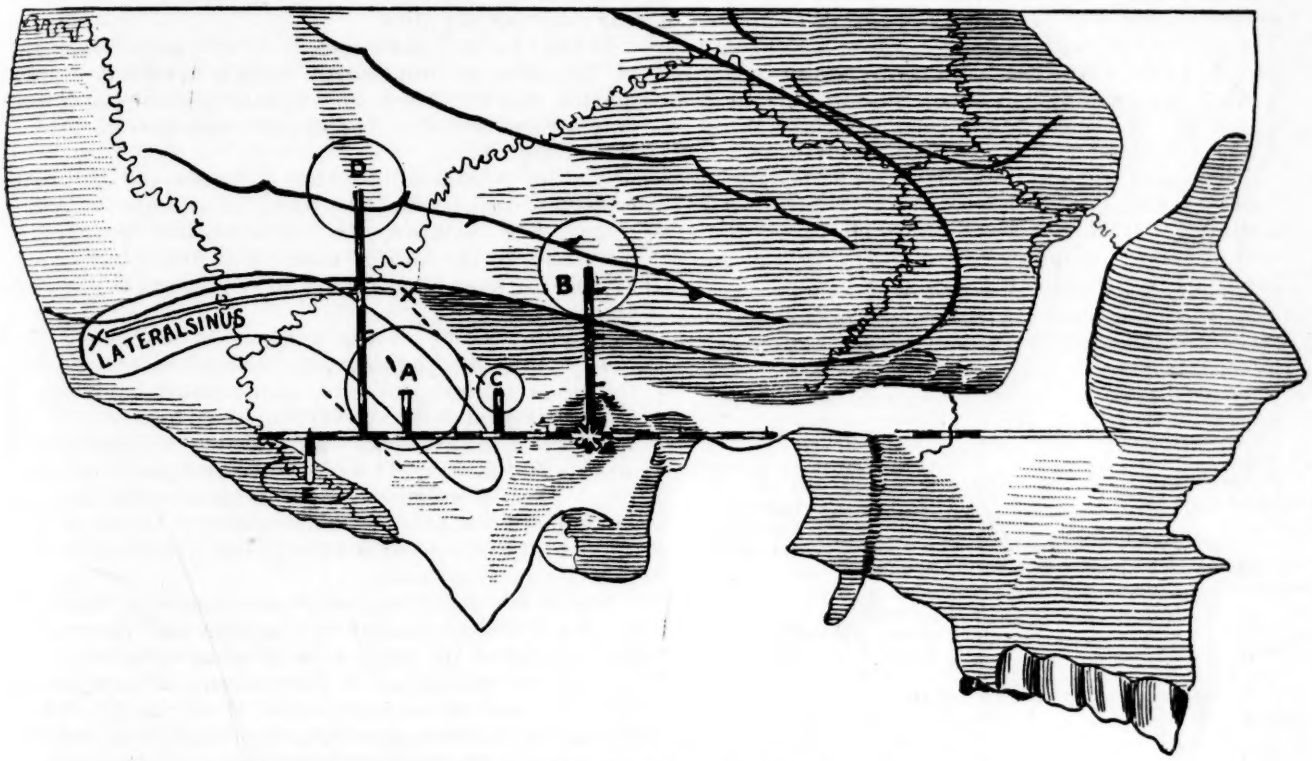
If the mastoid emissary vein be affected, we will usually notice induration of the neck and suppuration of the induration, œdema around mastoid process, tenderness over exit of mastoid emissary and jugular veins, suppuration over the former, œdema of eye-lids, purpuric spots on face and upper part of chest (this is usually one of the latest symptoms) general head pain, vomiting, coma, convulsions, facial erysipelas, dyspnœa and delirium.

If the facial vein is affected, we expect œdema of face, erysipelatous swelling of cheeks and eye-lids, and possibly vesicles on face.

It will be noticed that some of the symptoms here given, are the same, when different vessels are involved, this being due to the connection existing from one vessel to the other, and in consequence the almost necessary implication of more than one portion of the venous circulation at a time. A correct idea as to the original seat of disease, must be estimated by a review of the different conditions, with a careful elimination of the less predominating symptoms.

Besides these special indications of disease in the various vessels, there are some general symptoms of phlebitis and thrombosis of the cerebral sinuses and veins following otorrhœa, that must not be forgotten.

The general appearance of a patient suffering from this disease, is apt to be quite different from that of a person afflicted with purulent accumulations in the brain cavity. Of course it must not be forgotten that the two conditions may be combined in one case, in which instance, a mixture of both symptoms will be observed. The general appearance of a patient suffering from cerebral pus deposits. pure and simple, is not *active*. The disease kills insidiously; the condition is below par. The temperature and pulse are not much exalted; they may even be sub-normal. If the mental condition is disturbed, it is apt to be in a dull apathetic manner, and the entire appearance is usually one of depression and anxiety.



LATERAL ASPECT OF A SMALL ADULT SKULL. NATURAL SIZE. (FROM BALLANCE.)

The illustration shows the relations of the lateral sinus to the outer wall of the cranial cavity, and the position of the trephine opening (A) which should be made when it is deemed necessary to expose it. The base line (Reid's) passes through the middle of the external auditory meatus and touches the lower margin of the orbit. It is marked out in eighths of an inch, as are also the perpendicular lines drawn from it. The measurements are made along the base line from the middle of the bony meatus. The drawing also shows the convolutions of the temporo-sphenoidal lobe, the Sylvian fissure, and the position of the lower end of the furrow of Rolando. XX indicates the site of the tentorium as far as it is in relation to the external boundary of the skull. The anterior X shows the point where the tentorium leaves the side of the skull, and is attached to the superior border of the petrous bone. A, trephine opening to expose sinus, ⅝ inch in diameter, its center being 1 inch behind and ¼ inch above the middle of the bony meatus. This opening can easily be enlarged upward and backward and downward and forward (see the dotted lines) by suitable angular-cutting bone forceps. It is always well to extend it forward, so as to open up the mastoid antrum (C) and the gutter of the carious bone (if there be one) which leads from the antrum, tympanum, or meatus, down to the bony groove. The position of the trephine openings which must be made for the relief of inflammatory intra-cranial affections secondary to disease of the ear other than for sinus pyæmia have been added to the drawing for the sake of contrast and completeness. They are as follows: B, trephine opening to explore the anterior surface of the petrous bone, the roof of the tympanum, and the petro-squamous fissure. ½ inch in diameter, its center being situated a short inch (⅞ inch) vertically above the middle of the meatus. At the lower margin of this trephine hole a probe can be insinuated between the dura and bone, and made to search the whole of the anterior surface of the petrous. C, trephine opening for exposing the mastoid antrum, ½ inch in diameter, and ⅛ inch behind and ¼ inch above the center of the meatus; or ¼ inch above the center of the meatus and ¼ inch behind its posterior border. The trephine should be directed inward and slightly downward and forward. When a superficial disk of bone has been removed, it is well to complete the operation with the gouge. A large trephine may with advantage be employed, especially in adults. D, trephine opening for temporo-sphenoidal abscess, ½ inch in diameter. Situation recommended by Barker, 1¼ inches behind and 1¼ inches above center of meatus. The needle of the aspirator is to be directed, at first, inward and a little downward and forward. E, trephine opening for cerebellar abscess, ½ inch in diameter, and 1½ inches behind and ¼ inch below the center of the meatus. The anterior border of the trephine should just be under cover of the posterior border of the mastoid process. The drawing shows that a trephine hole made in this situation is far away from the lateral sinus, and that the trocar and canula of the aspirator, if directed forward, inward and upward, would hit an abscess occupying the anterior part of the lateral lobe of the cerebellum, which is the usual site of collections of pus in this part of the brain.

Phlebitis and thrombosis, on the contrary, induce a different state of affairs, and the patient appears exhilarated, and in a nervous, highly-strung condition. The temperature is never sub-normal, and is apt to be high, with occasional rapid changes from a medium to a high degree. Chills are of frequent occurrence. Violent delirium is sometimes seen, and the scarlet cheek and brilliant eye, denotes an exalted condition, and a rapid progress towards a fatal termination.

There is one symptom that I find recorded but twice in these 169 cases, where the post mortem each time revealed the same pathological condition. This symptom was a sudden rise and fall of temperature. The autopsy in both instances, showod a thrombosis in the lateral sinus, and internal jugular vein, and while not attaching too much importance to these symptoms and conditions, they should not be entirely forgotten.

I beg leave to here submit a chart with descriptive remarks, that I take the liberty of borrowing from Ballance. It is extremely simple and accurate, and will be found invaluable in elucidating the topography of the brain, skull, etc.

I have tabulated the symptoms occurring where phlebitis and thrombosis were present, and beg leave to submit them.

Head-pain	12	Optic neuritis	1
Ear-pain	2	Œdema of lids	3
Temp. medium	4	Diplopia	1
Temp. high	3	Facial herpes	1
Pulse medium	4	Facial paralysis	3
Pulse high	3	Facial veins enlarged	1
Chills	11	Vomiting and nausea	5
Mastoid tender and swelled	5	Neck swelled and painful	6
Delirium	9	Pyæmia	3
Unconsciousness	1	Diarrhœa	1
Coma	3	Epistaxis	1
Stupor	1	Sudden rise and fall of temp.	2
Somnolence	1	Exophthalmus	3
Convulsions	1	Œdema near ear	1
Vertigo	3	Meningitis	1
Strabismus	2	Œdema of uvula	1
Amblyopia	2		

I have also prepared a table showing symptoms that occur in *pure* cases of phlebitis and thrombosis, uncomplicated by any brain lesion.

These symptoms do not occur in any other class of cases under consideration:

Œdema of eye-lids	Epistaxis.
Facial veins enlarged.	Sudden rise and fall of temp.
Pyæmia.	Œdema near ear.
Diarrhœa.	Œdema of uvula.

I have also noted the symptoms found in both kinds of cases, viz.: Cerebral pus deposits, and cerebral phlebitis and thrombosis, following otorrhœa, but predominating in the latter. These are as follows:

Chills.	High Pulse.
High Temperature.	Episthotonus.

Records like these are significant, but too much reliance must not be placed upon them, as some of these symptoms may have been incidental only. We must naturally bear in mind in estimating these records, as to symptoms and post-mortem appearances, that some observers are more accurate than others in noting and recording such items, and in consequence the reports may not always be thoroughly correct. It is, however, in a large number of cases, comparatively easy to see the general drift, in favor of certain symptoms, post-mortem appearances etc. Again, many of the symptoms and post-mortem appearances are not at all significant, and hardly noteworthy. Their infrequent occurrence, and evident irrelevancy, deprive them of importance, and really make them unworthy of consideration. The principal symptoms, and the important seats of lesion should be born in mind, but further than this we need not go.

Phlebitis and thrombosis as heretofore specified, may be caused by direct contact of necrosed bone, with the capsule of the vessel, by contiguity of tissue along the vascular walls, or by means of pus migration through the small bony foramenæ, or the various vascular supplies.

It may be well, therefore, to briefly glance at some of the essential anatomical points involved in the matter, and for this purpose I take pleasure in referring somewhat to the studies and researches of Green, Bacon and Dana.

A close relationship exists between the cerebral veins and sinuses and the focus of disease in otorrhœa. For instance, the veins of the tympanum terminate in the middle meningeal and pharyngeal veins, and pass from thence to the internal jugular vein.

The lower floor of the tympanum separates this cavity from the jugular vein, and is perforated by the glosso-pharyngeal nerve and a minute vessel.

The mastoid cells are separated from the lateral sinus, by a thin osseous wall, which is perforated by minute foramenæ. It will be remembered, that the veins of the vestibule and semi-circular canals, accompany the arteries, and receiving those of the cochlea, at the base of the modiolus, terminate in the superior petrosal sinus.

There are eight emissary veins passing through the skull, which connect the organs and tissues in the interior of the skull, with those exterior to it. It is not essential that all of these should be mentioned, but the mastoid emissary vein is by far the most important. It emerges from the skull just behind the mastoid process, and furnishes a venous connection, between the lateral sinus and the occipital veins, outside of the skull. It passes through the mastoid foramen, and connects the lateral sinus with the occipital veins, and goes from thence to the internal jugular vein. Greene asserts that, its average position is just behind the posterior limit of the mastoid process, about on a line with the meatus. Its position is important, because it is at this point, that we may first notice the swelling, pain and tenderness that indicates an involvement of the lateral sinus. The condyloid emissary vein passes through the condyloid canal, and connects the plexus verteb. cervical., with the lower end of the lateral sinus. The parietal emissary vein passes through the parietal foramen, connecting the veins of the scalp, with the superior sagittal sinus. The occipital emissary vein, passes through an opening in the occipital protuberance, and connects the occipital veins with the sinus near the torcular herophili.

It should also be remembered, that the vascular supply of the scalp, skull, and dura-mater comes from the external carotid, while the vascular supply of the eye, brain, and pia-mater, comes from the internal carotid and vertebral veins.

My records show that the longitudinal, superior petrosal, lateral and transverse sinuses, and internal jugular vein, are affected by phlebitis and thrombosis,

with about equal frequency, and that these sinuses and veins are more frequently affected than any others.

From these statistics it does not appear that the lateral is more frequently affected than the other sinuses, as is generally believed. Indeed, the superior petrosal sinus was found thrombotic once more than the lateral sinus, which would lead us to infer that this disease is somewhat more inclined to spread from the middle and internal ears, than from the mastoid cells.

The frequency of involvement of the internal jugular vein, is accounted for by the easy transmission of disease from the middle and internal ear by three channels. One by the tegmen-tympani, another by a small vein passing from the middle ear into the middle meningeal vein, and thence to the internal jugular vein, with still another means of communication by the veins before mentioned passing from the internal ear, into the superior petrosal sinus, into the lateral sinus, and into the internal jugular vein.

The venous connection between the mastoid cells, and lateral sinus, which in its turn empties into the internal jugular vein, must not be forgotten in this particular, and we therefore infer it to be but natural that the internal jugular vein should be frequently affected, as it is the dumping ground of so many venous channels.

These cases run a variable course, extending from a few hours to several weeks, but the result is usually fatal, although instances of recovery are not rare. I myself have seen several cases, of undoubted phlebitis and thrombosis, of a most severe character, where complete and permanent recoveries have occurred.

Postmortem examinations have produced frequent cases of brain thrombi, where such a condition was not suspected during life. The explanation of this phenomenon is probably the vicarious action of the rich collateral circulation. Barr reports a case where the autopsy showed complete occlusion of the lateral sinus, by fibrous bands.

Death usually takes place from metastasis, especially by embolic pleura-pneumonia, less frequently by abscess of the liver and kidney, sometimes from pyæmia. We may be sure of a fatal issue, when thrombus of the internal jugular vein is found, with metastasis of the internal organs.

We have gathered that phlebitis and thrombosis of the cerebral sinuses and veins from otorrhœa is not so fatal in its character, as cerebral abscesses, etc., from the same cause, and consequently the indications for operation, are not so imperative. We can often afford to temporize somewhat with it, treat the indications and wait for developments and active indications, before resorting to operative procedures. This is fortunate, as it is difficult to get at the focus of disease in many instances, and our methods of operation are far from being crystalized.

We may first endeavor to remove the focus of disease in the middle ear. This may be done by opening abscesses, removing granulations, polypi, or necrosed bone, and by the use of quiet, aural douches of hot water, combating any incidental conditions that may arise, and the free use of alteratives, and absorbents, such as mercury and the iodides. If these measures fail, and the symptoms continue or grow worse, the mastoid process should be freely opened, even though no signs of disease be here present.

If now, after awaiting a reasonable length of time, the symptoms show no sign of abating, we must direct our operations directly to the sinus or vein involved. If thrombus of the lateral sinus is found, the internal jugular vein should be tied at two points in the neck, and the intervening vein tissue removed, after which the surrounding parts should be thoroughly cleansed, etc. This proceedure is necessary as an obstacle against the passage of the septic material into the general circulation.

The lateral sinus may now be exposed, by opening the skull one inch behind, and a quarter of an inch above the centre of the bony meatus. A free opening should be made, the diseased area thoroughly and antiseptically cleaned, and unhealthy tissue removed, after which it should be packed with iodoform gauze.

Ballance says that after the jugular is tied the face and lips become blue, but that it is only temporary.

Surgical interference upon the other sinuses and veins is not sufficiently crystallized to warrant extended remarks.

THE ACTION OF REMEDIES.

A paper read at the joint session of the Brainard District Medical Society and the Illinois Central District Medical Society, at Springfield, Ill., Oct., 13-14, 1892.

BY J. J. CONNER, M.D.,

MEMBER OF AMERICAN MEDICAL ASSOCIATION; MEMBER OF MISSISSIPPI VALLEY MEDICAL SOCIETY; MEMBER OF ILLINOIS CENTRAL DISTRICT MEDICAL SOCIETY; SECRETARY U. S. PENSION EXAMINING BOARD, PANA, ILL.

1. The lancet; 2. Veratrum viride; 3. Opium; 4. Coal tar derivatives; 5. Ergot; 6. Heat (poultices) 7. Cold; 8. Quinine; 9. Ammonia; 10. Calomel.

Mr. President and Gentlemen:—In presenting this subject to this Society it is not my purpose to traverse much of the field of materia medica, nor to notice many remedies, but to confine myself to a very few.

And in order to get a better understanding of the subject, I thought it best to choose some well known disease to base our study of remedies upon. I have therefore chosen pneumonia as a type of disease suitable for our purpose. As to whether or not pneumonia be a specific disease, having a certain definite course to run, and depending upon a particular microbe for its cause, or merely a local inflammation depending solely upon local causes, I shall not stop to discuss. I will say this, however, in the language of that Nestor of western medicine, N. S. Davis, "that the same process of reasoning that has caused many to call it (pneumonia) a general febrile disease, would equally assign all acute inflammations of important structures or organs to the same class." Neither shall I consider in detail the pathology of pneumonia, which, I doubt not, is as well understood by my hearers as by myself. I believe that we have in pneumonia—call it if you please, either a general febrile disease or a purely local manifestation—and in inflammation, precisely the same phenomena. In them both we have "a morbid process or alteration in a part in which there is perversion of nerve action, a change in the calibre of the arterioles, capillaries and veins; an increase in quantity and a change in the quality and motion of the blood, and in the conditions and relations of the elements of the tissues; reducing them to a more embryonic state, resulting in various kinds of metamorphoses. There is a tendency to stasis of the blood, effusion of

liquor sanguinis and leucocytes through the coats of the distended vessels; and of the red corpuscles by the rupture of their coats. There is generally a tendency to the proliferation of tissue cells and to the formation of new products, viz., lymph, pus and false membrane, and sometimes to the destruction of tissue. There is perversion of the function of the organ involved, and this process is generally attended with heat, pain, redness and swelling, and by a more or less febrile disturbance of the general system." I wish particularly to call your attention to two conditions which I believe to be *the sources* of danger to which a patient laboring with pneumonia is subject. I refer to the engorgement of the right side of the heart and to the distended condition of the pulmonary vessels of the lobes of the unaffected portion of the lungs. Of course, as will be noted further on, another danger accompanies or follows the great dilatation of the vessels, viz., the paralysis of the vaso-motor nerves. As is well understood, the heart, in pneumonia, has an increased amount of work thrown upon it. The affected lobes are no longer capable of allowing a circulating current of blood passing through them, but there is a stasis of the blood and consolidation of the inflammatory products which have been thrown off during the process. Now this being so, the heart is obliged to force the same amount of blood through the unimpaired lung tissue in a certain given time as it did while all the lung substance was healthy. The unimpaired lung tissue can oxygenize only a given amount of blood in a certain time, but now all the blood must be renovated as fast and as perfectly by one lung, or by two or three lobes as it was by both lungs or all five lobes before the pneumonia began.

Now, what are the indications for treatment here? Evidently to withdraw the force of the increased circulation from the distended blood vessels in the yet unimpaired lung tissue, and to reduce the amount of work of the heart, thereby preventing distension of the capillaries and paralysis of the vaso-motor nerves, and to maintain the reserve force of the cardiac muscle, and promote resolution in the inflamed lung. If we do not relieve the pressure in the unimpaired lung tissue there will be extension of the pneumonia, because a part of the phenomena of inflammation is an increased amount of blood, in a part accompanied with rapidity of motion of the blood current. This increased blood supply and rapidity of motion in the yet unimpaired lung tissue is what leads on to inflammation of that portion which is still able to do all that it was accustomed to do, but if pushed to the extreme limit, will become itself involved in the morbid process and incapable of doing its usual amount of work. This extra blood supply to a lung yet unimpaired, will, if not soon corrected, so increase the calibre of the capillaries and arterioles that the vaso-motor nerves supplying the muscular coats of these vessels will become paralyzed, rupture of the walls of these vessels will occur and the whole lung tissue will be involved in the pneumonic process.

If we had to deal with two or more reservoirs which were supplied by a large and sufficient watercourse for all proper demands upon them, and if by some mishap one or more of these reservoirs became disabled, and all the water was run into one of these reservoirs we would most certainly try to turn a part of the water in another direction, or shut off a portion of the water for fear of bursting the still unimpaired reservoir. If we for want of time or material failed in our endeavor to turn aside the rushing water, it would be necessary to tap at a certain, safe, and convenient place, the sound reservoir and relieve the undue pressure for fear the increased amount of force put upon the walls or embankments would cause them to give way. If we relieved the pressure in time we might be able to save the structure, and when the flood was over and the pressure taken off, the impaired reservoir might be repaired. So with the lungs in the storm and flood of pneumonia, we can, if the onset is not too sudden and great, cut off or relieve the pressure of the lungs by appropriate medicines and remedies, if we are given time, but if time is not given for our medicines to act, we can withdraw a portion of the blood from the turgid lungs and relieve the pressure by tapping with the lancet. The lancet is peculiarly applicable in cases of what the French are wont to call, "cerebral pneumonia," and in severe forms of pleuro-pneumonia. I have used the lancet in only a few cases, and in no case that I have used it have I regretted it; but in several cases where I did not have the courage to use it, or where such strong objections were urged against it that I deferred to them, I have been exceedingly sorry for it afterwards. In using the lancet I bleed for effect and not for quantity.

Case 1.—F. L., male, German-American, 20 years of age. While fox hunting one night sat down upon a log to rest, being at the time wet with perspiration, although the ground was frozen and partly covered with snow. Twenty-four hours afterward, on the morning of March 13, 1881, I was called to see him by his father. As I drove to his home about three miles in the country, I made up my mind to bleed him, as I knew he was a strong vigorous young man. I had recently been reading in the *Medical and Surgical Reporter*, Dr. Hiram Corson's views on bleeding in pneumonia. I had pictured in my mind a flushed face, dry skin and bounding pulse as what I should find when I got to my patient. Judge of my surprise and great disappointment when I found a pale face, moist skin, and what I now call a clogged or obstructed pulse, but which I then thought was a weak one. I was afraid to bleed him in the condition he was in, as I was a comparative stranger in that neighborhood, which had been dominated by irregulars and eclectics. He was in so grave a condition that I said to myself "if I bleed this patient and he dies it will be said that I killed him. I will therefore treat him on general principles and if he dies I shall not be blamed for his death." He steadily grew worse until the fourth morning, when he was raising a mouthful of very thin, bloody fluid almost every breath. I saw him again that night about 10 o'clock and believed he would die the next day. On the next day, being the fifth morning from my first visit, or sixth of his illness, I found him enormously improved. I saw upon entering his room, that a great change for the better had taken place, and I tell you I was frightened. I thought another doctor had been called in. I found on inquiry that at about 5 o'clock that morning the change had taken place. At that time, during a violent spell of coughing, his nose began to bleed and had bled fully a pint in a rapid stream. Nature, not being such a coward as I had been, was the doctor that had been called in, and had bled him copiously and had cured him. But I got the credit of it. This experience taught me a lesson which I shall never forget, and gave me courage.

Case 2.—Peter C., aged about 27; had been attending along with his friends and relatives, a protracted meeting during the month of March, 1884, I was called to see him on the 16th day of the month. One of his relatives had just been buried a few days before who had died of pneumonia after an illness of about one week. This relative had lived only about forty rods from my patient's home, and my patient attended him in his late sickness. Two doctors had attended him in his illness, but they could not save him. In a consultation they had said they believed bleeding would be beneficial, but neither one dared bleed him. Peter had been sick about 36 hours when I saw him first. He was in awful distress with pleuro-pneumonia. He was sitting up in bed, being unable to lie down, cramped nearly

double, and drawn to the right side holding it tightly with his arm. His skin was more like a frog's than a human's. It was cold, clammy and purplish. His eyes were bloodshot and staring. He was crying incessantly, "Oh! Oh! Oh!! my side! Oh! my head!" Nothing but grunt, grunt, grunt, and hollowing with his head and side. He said, "If you can give me anything, doctor, that will make me easy I want it quick, because I can't stand this pain any longer." I said, "Will you let me bleed you?" He replied, "I never was bled, but if it will ease me I will do anything." I told him that it would give instant and permanent relief. His skin was so pinched and veins so small that the blood would not run, and I ordered a pan of hot water to bathe the arm in. I then bled him until the perspiration stood on his brow and he got dizzy. I laid him down and he fell into a sleep for a few minutes. He soon aroused and some one said, "Pete, what do you wish?" He said, "I have not eaten anything for a day and a night, but if you will give me a square meal I will be all right." I saw him twice after that and discharged him cured. He has told me many times since that I saved his life by bleeding him. He said that medicine would have been too slow to have saved him.

In early stages of pneumonia of moderate intensity I rely on veratrum viride as my sheet anchor. It will do good in all cases of pneumonia when seen early. In its action it is more like bleeding than any other drug that I am acquainted with. It is said to "bleed the patient into himself." That is, it dilates all the capillaries and small veins which are contracted over the entire body—especially in the skin and near the surface, and relieves the internal pressure. It acts, I believe, directly upon the pneumogastric nerve, inhibiting or putting a break upon the heart, slowing its action, and also upon the great sympathetic nerve which governs the calibre of the blood vessels, the arterioles and capillaries especially.

In the beginning of a mild case of pneumonia I believe it possible to abort it by a judicious dose of opium or morphia. The opium acts by relieving pain thereby giving rest and quietude to the organism. Nature here steps in and finishes the job.

Some of the synthetic coal-tar derivatives will do the same thing, and partly in the same way. They act also upon the heat centre of the brain. It is admitted, I believe, that there is a "heat centre" governing the temperature of the body.

Ergot is said to act beneficially in pneumonia by contracting the vessels in the affected lungs, driving the blood out where it is not needed and distributing it to the general system. I have tried it only in a couple of cases. The theory of it acting in this way credits the drug with having a little too much discriminating power. By its advocates it is claimed to have what may be called intelligence enough to act only on the muscular fibre of the blood vessels of an inflamed lung, leaving untouched all the other muscular coats of the blood vessels of the system. Will it do it?

Poultices are said to act by warming the skin which relaxes the surface blood vessels, which become filled with blood, thereby drawing it off the lungs. How about the application of cold to the chest in pneumonia? How does cold relieve the pressure of the lungs? How can cold affect the vessels in the lungs when they are protected by the skin, fat, muscles, bones, fascia and pleuræ? Is it not done by depressing the heart? A better place for it then would be at the back of the head and nape of the neck in the shape of an ice bag.

Who does not give quinine in pneumonia, especially here in Illinois, but who can say why he gives it? If there is congestion of the lungs due to malarial poisoning and we have to deal with what may be called a "congestive chill," like the old practitioners used to talk so much about, all well and good, but many of us do not believe in "congestive chills" any more. Quinine acts directly upon the blood and heart. It kills the malarial parasite of the red blood corpuscle, the protozoa of Zavaran, which he discovered in 1880, and since confirmed by Osler in America and by several others. It acts upon the heart, reducing the number of beats and thereby taking the force off the lungs. It dilates the blood vessels, too, and acts also upon the heat centre of the brain. It will inhibit the heart's action in animals even after the vagi are cut. If it acts upon the heart and blood vessels as noted above, it will do good in pneumonia by draining the blood from the lungs, As quinine is a deadly weapon to the red blood corpuscle parasite, it may be that it does its good work in pneumonia by killing the diplococcus pneumoniæ of Fränkel. To be of any utility, it must be given in large doses, at least as much as 30, 40 or 60 grains 24 hours. I am apt to begin about midnight, as the temperature is nearly always lower at that time than any other, and give what quinine I wish my patient to have for the day in the succeeding 12 hours. I think it always does good when administered in this way. I think it beneficial to begin the treatment of pneumonia with a mercurial cathartic. The mercury does good in two ways, viz.: It unloads the prima viæ as well as anything else, besides it prevents the formation of fibrin and helps the ammonia salts to dissolve it after it is formed. The calomel is a good diuretic, too.

Gentlemen, I thank you.

102 Second Street, Pana, Ill.

MEMORANDA, PRACTICAL AND SUGGESTIVE.

Read at the Annual Meeting of the New York State Medical Association, November, 1892.

BY H. D. DIDAMA, M.D.,
OF SYRACUSE, N. Y.

EARLY ASPIRATION IN PLEURITIS.

In many instances pleuritis, especially the dry kind, sometimes the moist—the quantity of effusion being small—gets well with little or no treatment.

In other cases, where the attack is more severe, recovery also occurs under the use of cathartics, diuretics, sudorifics and blisters, with or without total abstinence from water or other beverage. The illness—as is well known—is apt to be prolonged; the recovery is often incomplete, and the convalescence tedious and discouraging.

Furthermore, in a large percentage of cases, the therapeutic management just indicated fails entirely to secure a favorable termination. So that the thoughtful medical attendant is sometimes perplexed to determine whether the unsatisfactory course is due wholly to the malignancy of the disease, or in part to the imperfection of the treatment.

The consensus of modern medical opinion, as expressed in books, is that after giving the remedies a fair opportunity and a reasonably generous time to secure the absorption of the pleural effusion, if the desired object is not accomplished, or if the amount of transudation becomes rapidly so great as to imperil the life of the patient, then paracentesis should be cautiously, but to a moderate extent only, performed.

The limit of this probationary period, and the danger-symptoms and signs which should be mani-

fest before instrumental interference is justifiable, are variously set forth by different authors. Ten days to four or more weeks if the flatness on percussion does not extend well above the nipple, and if dyspnœa is not of marked severity, would fairly cover the extreme time proposed by conservative experience for waiting and watching.

For several years a minority of physicians, including the writer, have pursued a different course, with more satisfactory results. We do not regard active catharsis, diuresis or diaphoresis as an essential or important part of the treatment. Anodynes and strapping while the pain is severe; tonics, as quinine, iron and strychnine, if the patient—as *he* often and *she* usually—is in a weak condition; and then when with mitigation of pain and some subsidence of fever, percussion shows that fluid is present, even if the amount does not exceed an estimated half pint, aspiration is performed.

The diagnosis is verified, and the depth of the trocar puncture determined, by the hypodermic needle. Cleanliness of skin and instruments is secured. The operation at this early period is done while the patient is in a sitting posture. No effort is made to leave a portion of the effusion to be removed by absorbents.

As a rule, which has scarcely an exception in the practice of the writer, a repetition of the operation is not needed. The lung expands, normal respiratory sounds reappear, and the friction fremitus returns with exaggerated distinctness. More or less pain or discomfort is felt in the affected side, but convalescence is rapid and unattended by great prostration, and the recovery is complete.

The experience of the writer has been reasonably extensive. He has had at least forty original cases where he has performed aspiration early; and the outcome has been such that he has no inclination to resort to any other treatment now known to him.

He has been called to a considerable number of cases where a diagnosis of hepatized lung, or enlarged liver, or malign tumors had been made, and also in consultation to several cases where the diagnosis was correct and early, and where the most vigorous antiphlogistic and eliminative treatment had been pursued from the outset. In these cases—and in these only—has he found the cautions laid down by the authorities important.

In some instances the lung, crowded or retracted to the upper part of the chest, had become imprisoned by adhesions, and even carnified, so that it could not expand, while the heart was pushed or drawn over, so that its pulsations were palpable and visible to the right of the sternum.

Only a portion of the fluid could be removed without exciting violent fits of coughing, and not infrequently, after a few days, a repetition of the operation was demanded.

In a few instances—where some of the patients were young and previously healthy—pyothorax was present, apparently because an early operation had not been performed owing to reliance on authorized medication, or because a faulty diagnosis had been made.

The supporting and alleviating treatment of pleuritis, combined with early thoracentesis, seems to possess these positive and negative advantages: It is easily and safely done; it does not add to the local inflammation, but actually relieves and shortens it; it is not debilitating; it removes in a few minutes a quantity of fluid which could not be removed through the skin, kidneys and bowels in many hours, days or even weeks, and it does all this without causing weakness and slow recovery; it prevents the carnification of the lung and those tender adhesions which in late aspirations eventuate in deformity of the chest, and hemorrhage into the pleural cavity; it prevents congestion of the lung on the unaffected side, and injurious dilatation of the right ventricle; it probably secures exemption from empyema in many cases; and if it be true (as some active writers vehemently claim), that every case of pleuritis is tubercular, then this treatment, like the prompt removal of the fluid in tubercular ascites, is decidedly the most efficacious in preventing or arresting general bacillary infection.

In short, it averts death, and most safely, easily, promptly, permanently cures the patient.

SOCIETY PROCEEDINGS.

The American Public Health Association

Held its recent annual meeting in the City of Mexico. We are pleased to be able to give our readers the following:

MONDAY, NOVEMBER 28.

The general program prepared by the local committee of arrangements is given as under:

9 A.M.—Visit to the Mordos Hospital, at San Juan de Dios

Visit to the San Andres Hospital, on San Andres street.

Visit to the Cathedral square of the Constitution.

Visit to the Home for Foundlings on Second Merced street.

Visit to the Disinfection Department and Jourez Hospital at San Pablo.

3. P.M.—Visit to the School of Medicine, corner Domingo and Perpetua streets.

Visit to the Normal School for lady professors, Sta. Catalina street.

Visit to the Law School, Encarmacion street.

Visit to the Normal School for male professors, Cerrada of Sta Teresa street.

Visit to the Conservatory of Music, at the University.

Visit to the Installation of Pumps, at San Lazaro.

At evening more music in the court of Iturbide Hotel. This being the place of rendesvous, everybody (substantially) met each other here from twice to a half dozen times daily, so we all enjoyed the national airs of the various countries represented at the meeting as well as the other ppoular airs rendered by the orchestra before retiring for the night.

TUESDAY MORNING NOVEMBER 29.

Pursuant to announcement and according to program the twentieth annual meeting of the A. P. H. A., convened in the Chamber of Deputies (cor. Factor and Canoa streets) in the city of Mexico, the first session being called to order at 10 o'clock by the President, Dr. Felix Formento, presiding, who in a few well chosen remarks, declared that the meeting was now formally opened. His first remarks were spoken in English. After which he duplicated the same in Spanish.

Among the things he said were: This annual meeting promises to be the grandest and most glorious of any preceding one, up to this moment 546 applications for membership having been passed on and recommended by the Executive committee for election at this meeting. Seventy-five papers have been received, and altogether this meeting in our sister republic will be a most noticeable one in the

history of the epoch of this organization. (He closed amidst plaudits).

The Chamber of Deputies (cámara de diputados) is a very imposing structure built of stone and marble, contains a parquette circle, two dress circles and four balconies, besides three boxes in tiers on either side right and left to the stage. The entire chamber and boxes were beautifully embellished with many flags of the Mexican and United States Republic, Central American colors and those of Great Britain, the folds of each in numerous instances being tastefully interwoven with each other. At the Tribune, above and about the President's chair, the beautiful stars and stripes of Uncle Sam predominafed, although the Mexican colors of red, white and green in satin bannerettes was conspicuous in many of the other chairs and throughout portions of the dress circles. The Mexican eagle in colors was also above the president's chair. A magnificent chandelier hung in the center of the chamber suspended by a huge cable chain from the ceiling having 250 candle lights. No ladies were present at this first morning's session, and Spanish or Mexican physicians predominated in numbers. Upon ordinary occasions the boxes, parquette chairs and dress circles are occupied by diplomates and deputies, but in this instance every seat occupied contained not only a deputy or diplomat but a scientist in hygiene. In the parquette as elsewhere, it contained nice cane bottom chairs. portable. A beautiful moquette carpet, rich in design covered the floor, and throughout the entire building a great deal of beauty and taste was displayed, besides containing a great deal of gilt and rich moldings. On either side of the foyer were a number of exceedingly tastefully arranged dressing rooms, etc. In the chamber 1,000 persons can easily be seated. It was built in 1860 at a cost of $500,000.

The President was followed by Rev. J. W. Butler, D.D., in an eloquent and affecting prayer in English.

Chairman Liceaga of the local Committee of Arrangements made several announcements in the Spanish language, after which he stated in substance, translated, that he hoped any imperfections that might creep in in the program, entertainments or otherwise would be excusable, and if we did not get all we hoped or wished for, to call for it, as the committee and citizens would do everything willingly to make our guests welcome and feel at home.

Dr. Watson, the Secretary, then announced on behalf of the Executive Committee that 546 applications which he held in his hand were recommended for membership as follows: 189 outside the Federal District of Mexico, 141 within the Federal District of Mexico, 216 from the United States and Dominion of Canada.

A motion which was made empowering the Secretary to cast the unanimous vote of the Association for the names recommended without reading them, prevailed, and the vote was so ordered and declared a valid one.

Dr. Formento arose and proposed the name of President Profiro Diaz for honorary membership. The same being seconded was unanimously carried amidst vociferous applause.

The first paper read was entitled: "Influence of Climate on the Progress and Severity of Pulmonary Tuberculosis in the United States of Mexico, and Practical Consequences that are Inferred." by Dr. A. J. Carbajal, of the City of Mexico, the author reciting an experience of twenty-three years in civil and two years of hospital practice. His theme was handled in a most satisfactory manner. The paper was read in Spanish.

The second paper read was by Dr. R. C. Kedzie, of Lansing, Mich., who selected for its title "The Ground of Safety." The author illustrated his remarks by essaying to blow air through leather, India rubber, plaster and cylinders of oak wood each twelve inches in length and two inches in diameter, before an ignited candle. He demonstrated that he could blow air readily through a six inch cylinder of plaster. To blow through a paper wall—it was dead and it does not breathe; in other words, it is a strangled wall. A calcimined wall laid on with glue, there is a very slight breath. A dry plastered wall—air will pass through it. A wet plastered wall—air is drowned or strangled; water stops soil breath.

Third paper, a short one, presented by Dr. W. A. Haskell, of Alton, Ill., read by Dr. Gihon entitled, "Medical Demography."

The fourth paper presented was by Dr. Domingo Orvanos, of the City of Mexico, and first Vice-President of the Association. The author, who read in Spanish, chose for the title of his paper, "Climate of the City of Mexico." This paper was discussed at length in Spanish by Dr. Otero, of Mexico.

The Association then adjourned until 3 P.M. to meet in the main hall of the National Preparatory (High) School.

The scientific business during the afternoon of the first day, at the National Preparatory School, was transacted with Dr. Formento, the President, in the chair, and was well attended.

The first paper read was by Dr. Rafael Lavista, of the Federal District of Mexico, whose subject was, "General Considerations upon the Public Health," read in Spanish. It was a brief paper and its author elicited considerable applause at the close of reading it.

Dr. W. M. Yandell, of El Paso, read the second paper, which was a brief one, on "Contagious Diseases on the Rio Grande Border." The paper was statistical in nature, timely and its author was warmly applauded.

A paper showing a new method of quantitative chemical analysis to obtain nitrogen from organic matter, based on the transformation of nitrogen into ammonia, was read. The process was by the Mexican chemists Alexander Noibey and Victor Lucioy Ortego.

The next paper read was by Dr. William T. Corlett, of Cleveland, O., "On Some of the Infectious Diseases."

After the reading of the above paper Dr. Liceaga introduced the subject, "Against the Marriage of Persons Infected with Tuberculosis." He argued that phthisis was a contagious disease and cited a number of cases to prove his statements. Considerable discussion ensued. The tendency and preponderance of opinion was to agree with Dr. Liceaga.

An adjournment was then taken to meet in the National Theatre at 8 P.M. to attend the solemn inaugural session. This is a beautiful building and was filled from pit to dome by the best citizens of the Republic (ladies and gentlemen) in evening dress. Archbishop Alarcon invoked the Divine blessing at this formal solemn opening, and Dr. Liceaga delivered the address of welcome. During the evening a superb orchestra of sixty pieces under the directorship of Senor Jose Rivas, Director del Conservatoire National de Musical, discoursed fine music, among the numbers being the Star Spangled Banner, God Save the Queen, Mexican National Hymn, etc.

The limited space of THE JOURNAL precludes the publication *in extenso* of the very able addresses delivered at the formal solemn inauguration this (Tuesday) evening by Dr. Liceaga, Chairman of the Local Committee of Arrangements, and Dr. Formento. President of the Association. The following extracts of each are herewith given. Dr. Eduardo Liceaga closed his magnificent Address of Welcome in the following words:

"And what have our visitors come to do in our midst? They have come to impart to us their own faith, to instruct us in their method of working, to spread new ideas, to concert with us a mutual plan of defense against the propaga-

tion of such diseases as arise among us, to see what means Nature employs to enable us to breathe at this immense altitude, to observe how we build our dwellings in a climate in which artificial heat is not required, to admire the purity of our atmosphere, the transparency of our light, the radiance of our sun, to examine the modifications produced by the meteorological conditions of this altitude, within the tropics, on the mode of existence of animated beings.

"As for ourselves, we welcome them with open arms. We purpose to show them our hospitals, far inferior, alas, to the splendid monuments which they have reared in the name of charity; to explain in what manner the Government extends protection to foundlings, to ailing children, to orphans, how it imparts to them a knowledge of the mechanical arts, how it reclaims the erring, and how many of these institutes are organized on a military footing. We shall conduct our guests through the establishments where education is furnished to the teachers, male and female, whose duty it will be to spread the benefits of elementary knowledge, through our Preparatory Professional School, through our Schools of Medicine, Jurisprudence, Music, and Fine Arts, through our National Medical Institute—not on account of the intrinsic excellence of these establishments, nor because we imagine that they can endure comparison with the superb foundations which private munificence has reared in your own countries—but because we believe that perchance you may take an interest in beholding these evidences of the moral and intellectual development of this people, so torn by political convulsions which attack nations in their infancy and adolescence just as disease attacks and exhausts the physical and mental constitution of man in boyhood and early youth.

"We shall show you, too, the works recently undertaken to secure an improved water-supply. At your last meeting one of our sanitary engineers explained to you the project for a new sewerage system for the city, to supersede the present very defective one, and now you are about to see the provisional works undertaken for the purpose of improving the flow of the sewers until such time as the new scheme can be carried out in its entirety. We shall enable you to view, and as hygienists you will be interested in viewing, one of the most gigantic works ever undertaken for the sanitation of any city—the drainage of the Valley of Mexico. Finally, we shall conduct you through the suburbs of the city and spread before your eyes a view of this broad valley from the historical hill of Chapultepec.

"And as for you, esteemed fellow-countrymen, who have also left home and business and come hither from afar to recount your experience of the dreaded yellow fever, your speeches will inform us whether that scourge is produced spontaneously among you or whether it is imported, and if so, in what way, and what steps you have taken to liberate the coasts from its ravages. Others among you will tell us the places where malaria prevails and what has been done for th ir sanitation, the regions in which tuberculosis is unknown or its ravages are less violent than on our coasts, the towns which are free from diphtheria, those others in which it rages, the measures which you recommend to prevent the spread of typhus, the method by which your cities are supplied with water, and all other matters of interest to hygienists.

"Little has been done as yet towards the sanitation of our cities, but this is a truth which we need not be ashamed to confess, for we are a young people desirous of understanding thoroughly the evils under which we labor before seeking a remedy. Our Governments have given us good sanitary laws and it remains for us to devote our intelligence, our energy and our zeal to the service of our countrymen and the fulfilment of those laws, thus contributing to the noble ends of the American Association of Public Health, which has accomplished such splendid results in the United States and Canada, and which will, we trust, accomplish the same results here.

"Gentlemen, receive the thanks which I offer you in the name of my country for having selected this city as the scene of your annual meeting.

"Gentlemen, I bid you welcome."

Dr. Felix Formento concluded his lengthy address as follows:

"In my opening remarks, were mentioned the causes which created particular interest in the present reunion; a spirit of justice induces me to recall here the two factors which have mostly contributed to its success:

"Shortly after our last meeting in Kansas City, our worthy Secretary undertook, in the interest of our Association, a long and fatiguing journey to the remotest regions of this immense country, to Cuba and Central America. Its principal object was to excite the interest of the people and of the different governments in sanitary matters and to obtain their participation in this meeting. To that effect Dr. Irving A. Watson was commissioned "Health Ambassador" to Mexico, Cuba and Central America. For the first time, perhaps, was such a mission confided to any one. No ambassador of kings or monarchs ever received a more flattering and hearty welcome—an honor rendered to the personal merit of the man as well as to the representative of this great international organization. His mission was a complete success.

"The Chairman of the Local Committee of Arrangements plays a no less important part in the happy results of our meetings. No better selection could have been made than that of our eminent and distinguished chairman, Dr. Eduardo Liceaga. To the high official position he occupies, to the legitmate influence he commands, to his scientific attainments and social standing in this community, the success of the Congress is mainly due.

"This double debt to our Secretary and to our Chairman of the Local Committee of Arrangements, is cordially acknowledged and I take pleasure in tendering them the thanks of the Assembly and the assurance of my personal gratitude.

"Let us congratulate ourselves, gentlemen, upon our acceptance of the pressing invitation of the Mexican Government to hold our meeting in this city. The intelligent transfer of the scene of our debates, far beyond our boundaries, to the capital of our friends and neighbors, is the first step to the scientific unification of the whole American Continent. This is the first International Health Congress held on this side of the Atlantic. As such it is our duty to unravel the problem of yellow fever, which is the only obstacle to the much desired commercial, social and intellectual intercourse between our respective countries and nations. Yellow fever is the curse and drawback of America's southern climes. If this meeting could successfully devise the means of stamping it out forever from all parts of the Continent, it would richly deserve the blessings of future generations.

"In another point of view, this meeting deserves our reciprocal congratulations. We need only to meet in conference and immediately a bond of friendship is sealed, not merely between scientists, but between the two nations.

"In addition, what an opportunity, never to be forgotten, of seeing, of admiring Mexico in all her glory! Of being able to witness the grandeur, the prosperity of this land of the Montezumas under its progressive republican form of government, its modern resources, to contemplate its bold railways and viaducts, suspended in mid air, in their vertiginous ascent and descent of gigantic mountains, its beau-

tiful valleys, torrents and streams, its majestic scenery, its thriving towns and cities, rendered rich by local industries, its mines and its forests, its palaces, cathedrals, schools, and museums—the whole thing brought out in relief by the vestiges of its immortal past, a double civilization in striking contrast!

"Should we leave unmentioned its delightful climate, its blue sky, its wonderful fruits and beautiful flowers?

"But above all stand the noted courtesy, the exquisite refinement of its inhabitants, who have made us at home and filled our hearts with everlasting gratitude!

"This day will be inscribed in gold letters in the Annals of the Association, and I hereby express the sentiment of the assemblage, when I exclaim from the bottom of my heart: 'Viva Mexico!'"

To resume our personal reminiscences. This afternoon among the notable places visited were the National Palace, where we were received with honors by a number of army officers who devoted themselves to showing us very many sights in the various apartments throughout the building, among which was President Diaz's state chair, the president's rooms, portraits of Inarez, Hidalgo, Washington and Maximillian and many other historical personages in the Ambassador's hall. We were also escorted through the Government departments, other public offices, etc., and before leaving were presented to General Pradillo, the Governor.

We also visited the National Museum this afternoon and saw many curious Aztec antiquites, picture writing, Montezuma's shield, the statue of Huitzilopochtli, the God of War, the Calendar stone, Tula Monoliths, goddess of water, Palemke cross, Chacmol, and the Sacrificial stone, oil portraits of viceroys and of Cortez, Maxmillian's gala coach, and his silver service. We also visited the Natural History and Mineralological departments that contain an innumerable variety of skeletons—the taxidermists' art, etc.

The social program for this (Tuesday) day as arranged by the Social Committee was as follows:

At 8 A.M., visit to the Beneficiary Offices and Central Pharmacy on Xicotencalt street; visit to the Mining Schools on San Andreas street.

At 1 P.M., visit to the Arts and Trades School for men, Estampa of St. Lorenzo street; visit to the Preparatory School, San Ildfonso street.

From 3 to 5 P.M., session in main hall of said school.

5 P.M., visit to Central Meteorological Observatory, at the National Palace; and at 8 P.M., solemn inauguaration at the National Theatre.

(*To be concluded.*)

DOMESTIC CORRESPONDENCE.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

It is safe to affirm that nine-tenths of the regular profession heartily agree with the views, stated by "Conservative" in his letter to THE JOURNAL of the 10th inst., as to any essential change in the code of Medical Ethics—as now recognized by the American Medical Association.

In addition to his admirable presentation of affirmative reasons for the retention of the code in question, it may be stated that every annual meeting in the history of the Association has offered an opportunity to cancel or revise the provisions of said code—and aside from recent left-handed movements having origin in a single locality and society tributary to the organization—and whose animus and spirit only tended to sustain the principle they would undermine—other than this the code has retained that freedom from disapproval due to its excellence and origin. As the declaration of cardinal principles relative to medicine, it is the analogue of that framed by Jefferson as applying to the citizen, and that upon which each are founded in theology, the "sermon on the mount." Its abrogation would be worse than suicidal, its revision—as to essentials—a dangerous experiment.

The one provision objected to by the free for all go as you please advocates, is, in the nature of events and the period which now obtains *the one* specially amenable to a more rigorous interpretation or amendation—the daily press in solid phalanx for the defense and promotion of quack advertising, methods and literature, its direct channel of financial sustainance, is a giant menace to honorable practice, and an increasing force for the breaking down of all distinctions between merit and fraud, ability and ignorance, honor and cunning. No such influence operates to prevent the full recognition of merit and talent by the press of legal and clerical claiments of public approval, hence public security against imposition in medicine resides in the profession, and handicapped, as stated at that, by the immense dead weight of a subsidized press. It follows that medical impostors have allies and support quite sufficient without adding the assistance of a common level consultationship with qualified practitioners. It degrades, and does not—for it cannot—elevate decent and legitimate practice, something that demands, like all worthy factors of civilized life, the most vigilant care.

IOWA.

BOOK REVIEWS.

DISEASES OF THE CHEST, THROAT, AND NASAL CAVITIES including Physical Diagnosis and Diseases of the Lungs, Heart, and Aorta, Laryngology and Diseases of the Pharynx, Larynx, Nose, Thyroid Gland and Œsophagus. By E. FLETCHER INGALS, A.M., M.D., Professor of Laryngology and Practice of Medicine, Rush Medical College; Professor of Diseases of the Throat and Chest, Northwestern University Woman's Medical School; Professor of Laryngology and Rhinology, Chicago Polyclinic, etc., etc. Second edition, revised and enlarged. 240 illustrations. Octavo, 700 pages, extra muslin, price, $5.00. William Wood & Company, New York.

The second edition of this book is a gratifying improvement on the first. The author has done himself credit and added to the value of this volume in several directions. In the part devoted to the heart and lungs he does not restrict himself, as in the first edition, to the diagnosis and treatment, but has amplified his work by adding the subjects of etiology, pathology, symptomatology and prognosis. The division on nose and throat diseases has been quite largely re-written. In passing from diseases of the lungs and heart to those of the nose and throat, one cannot escape the impression that the natural dissociation of these subjects should induce the author to produce two books instead of one. This would enable him to do greater justice to his acknowledged ability by treating in detail in one volume those diseases which lie in the province of the general practitioner, and in another, those affections which the modern evolution of the science of the economy of labor has assigned to a generally recognized specialty.

Probably no one will feel more keenly than the doctor himself the embarrassing limitations imposed on this work, which, if treated with desirable fullness, would far outgrow the handsome and convenient book he has produced. The inference is naturally suggested by the regrets expressed in the prefaces to both volumes, that it is impossible for him to accord credit to many authors to whom he is indebted for material, since this feature forms not the least

interesting and weighty part of such a treatise. The writings of Morrell Mackenzie afford a generous and scholarly illustration of this kind of authorship, and doctors, like lawyers, are fond of having authorities quoted.

The article on pulmonary phthisis is limited to twenty pages. The reader will wish it had been extended to double that number in Dr. Ingals' entertaining style. No room is given to tuberculin, but the details and results of the Shurley-Gibbes treatment are plainly and practically stated. Asthma, on which Hyde Salter has written a book, is given a little more than four pages. The author seems to have lost none of his enthusiasm for the galvano-cautery. The writer recently asked a specialist and professor in these diseases what galvano-cautery apparatus he employed. "Not any," was his reply. But there is a happy medium in these matters, although it may not be the patient. The doctor also retains his preference for aqueous solutions and powders in catarrhal conditions. The frequency with which patients are given cocaine preparations for home treatment is surprising when we remember its paralyzing effect on the vaso-motor nerves, sometimes producing a secondary congestion which transcends the existing pathological condition, and knowing the misery which the cocaine habit has inflicted on its victims.

In the article on "throat deafness" the theory is announced that in rarefaction of the air in the tympanic cavity "producing tension of the tympanic membrane, the chain of ossicles is put on the stretch," etc. This is somewhat at variance with the teachings of the older authorities. On page 602 there is described the appearance of the drum head in the region of the "malleolus"—probably a cerebral slip, the author having ankylosis in mind. His advice to have patients treat themselves daily by injecting vapors of iodine and eucalyptol into their middle ears with inflators is out of harmony with the teachings of the leading authorities of the day.

A commendable feature is the frequent use of comparative tables for differential diagnosis arranged in parallel columns, enabling the student to form a mental picture of the variations of similar diseases at a glance.

The publishers have maintained their high standard of excellence in the typographical art. The type is of good size, clear, with only little lapses into trying fine print, and the paper has but one fault. It is glazed sufficiently to reflect the light into the reader's eyes at night. As physicians usually have no other time for reading, it is unpardonable for publishers to inflict this eye-weakening punishment upon their best friends. The book is embellished with numerous illustrations that are generally good.

One does not need to jog his memory very violently to stir up the recollection of the time when western men thought it necessary to draw their medical inspiration from the founts of learning which, *cum gratia Dei*, blessed that part of America only that lay east of the Alleghany mountains. Since the profession of the great Northwest has irreverently dispelled this delusion, has the time not arrived when the execution of the mechanical and artistic part of our book-making can be effected in the neighborhorhood of the libraries and hospitals where the book material is produced? An answer to this question seems to lie in the fact that in Chicago there are 1,300 firms employing 20,000 people, sending annually more than 15,000,000 bound volumes to the book patrons of the world.

IT is said that its enemies spent $60,000 to defeat the Paddock Pure Food Bill. As it advocated patented and proprietary foods, etc., its death may not be regretted.

SELECTIONS.

THE BRAIN CENTRES OF THE EMOTIONS: ARE THERE SUCH CENTRES?—According to Spencer and Bain, those physical states which we class as feelings are inseparable from those which we class as intellectual processes. Feeling, thought and volition constitute a "trinity in unity;" they are characteristic in their several manifestations, yet so dependent among themselves that neither could subsist alone; neither will nor intellect could be present in the absence of feeling, and feeling manifested in its completeness carries with it the germ of the two others (Bain). Feeling, according to Spencer, is the primordial unit of mind, and emotions are highly complex aggregates of simple feelings.

Dr. S. V. Clevenger, in the *American Naturalist* for November, 1892, accepts and reinforces this view. The emotions have vaguely been regarded as having several centres, or a single centre. Often in physiological writings we encounter the term "emotional centre," and reasons more or less incorrect have been advanced locating this "emotional centre" at the base of the brain.

Emotionalism, Dr. Clevenger says, in a broad sense is nothing more or less than degrees of excitement. So from this standpoint it is a condition, an exaltation or depression of the nerve-centres; and hence it would be absurd to look for its centres. Joy, grief, anger, fear, jealousy, are all conditions which may engage every cell in the body at times. The fact that there may be crying and laughing centres in the medulla does not constitute that portion an emotional centre any more than we are justified in calling the leg centres in the brain-cortex, kicking centres. The laugh and cry may be purely automatic, and without reference to the emotions at all. Besides, some emotional exhibitions, such as tremblings and pallor, indicate that during emotional excitement nerve force is pretty well diffused throughout the body, and that no particular set of nerves is engaged. It would seem that in such instances there is excellent evidence of the absence of an emotional centre, and the shaken-up general nervous system can find no special outlet for the feeling.

When a rupture of a blood-vessel in the motor centres of the brain causes paralysis, and in cerebral degenerative states, such as are induced by alcoholism and senility, there is an increase of emotionalism. The patient may cry and laugh easily; but in such cases the higher control is lost, impressions are diverted from former channels in the brain to the more automatic ones lower down, but the emotionalism is the product of brain injury and is a debased condition, and hence has no centre in the brain. The fact that the brain-base at its junction with the spinal cord has laughing and crying reflex centres may warrant this area being named an emotional centre in a very limited sense; but, strictly speaking, there can be no such thing as a centre for the emotions, for laughing and crying are but two among a great number of emotional exhibitions, and they may recur unconsciously.—*Boston Medical and Surgical Journal.*

ELECTRICITY IN PELVIC TROUBLES.—On the use of electricity for pelvic troubles, Dr. Price says: "It is utterly incomprehensible how any sane man can advocate the use of electricity; it seems that it is only in such hidden regions as the pelvic that the electricians claim any resulting good from their treatment. Why not apply this all-powerful, this infallible and omnipotent curative effect of electricity to the resolution of abscesses found in the neck of strumous children? Certainly wealthy mothers would pay well, even handsome fees, to save their children from carrying through life loathsome scars, not to mention the satisfaction of the operator upon curing his patient without the deformity resulting from the formation of a cicatrix."—*National Medical Review.*

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This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues and subscription for THE JOURNAL. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

SATURDAY, DECEMBER 24, 1892.

THE CODE OF ETHICS, CONSTITUTION AND BY-LAWS OF THE AMERICAN MEDICAL ASSOCIATION.

The Committee on Revision, of which DR. A. M. HOLTON, of Brattleboro, Vermont, is chairman, is anxious to obtain as much of an expression of sentiment in relation thereto as possible; to that end correspondence is solicited from all who are interested in this subject, in order to enable the committee to frame such a revision as will represent the opinions of the majority of the members of the Association. Such correspondence may be addressed to either member of the commiteee: A. M. HOLTON, Brattleboro, Vermont; LEARTUS CONNOR, Detroit, Mich.; H. D. DIDAMA, Syracuse, New York; DANIEL T. NELSON, Chicago, Ill., and BENJAMIN LEE, Philadelphia, Pa.

RESULTS OF RESEARCHES IN BACTERIOLOGY.

The practical value of bacteriology is now questioned no longer. The invaluable services which this young science has rendered preventive medicine by placing disinfection and sanitation upon a sound basis; the immense benefit it has brought to antiseptic and aseptic surgery and obstetrics by clearly defining the exact indications for, and the most reliable methods of sterilization; the positiveness in diagnosis which the actual demonstration of the specific cause of a disease affords; and the protective inoculation with attenuated cultures against infectious diseases in the domestic animals—these are results of bacteriological researches of such practical value as to satisfy the highest expectations of the enthusiast of a few years ago.

To-day bacteriology is about to revolutionize medicine by elaborating a specific treatment of the infectious diseases.

The demonstration that pathogenic bacteria are virulent on account of their chemical products and the study of the toxines and toxalbumens of infectious diseases led to the discovery of anti-toxines in the blood of animals immune against certain diseases and these anti-toxines were found to have an unexpected antidotal power. The researches of BUCHNER, MARTIN, HANKIN, NUTTALL, and others paved the way for the demonstration by OGATA and JASUHARA that the injection of a drop of blood from an immune frog will protect a mouse against an ordinary fatal anthrax inoculation, and then BEHRING and KITASATO showed that the blood of animals immune against tetanus and diphtheria, if injected into susceptible animals, prevents fatal infection with virulent cultures of the bacilli of these diseases; suitable experiments readily showed that the toxalbumen of the tetanus bacillus is nutralized when mixed with the blood of immune animals and the next step was the isolation of the tetanus-anti-toxine by TIZZONI and CANTANI and the successful treatment of actual cases of traumatic tetanus by means of tetanus-anti-toxine injections. Already six cases successfully treated by this novel and specific but absolutely scientific method have been recorded in medical literature, the first one being reported by RUDOLPH SCHWARTZ.

G. and F. KLEMPERER then showed that the blood serum of animals artificially immune against croupous pneumonia renders susceptible animals immune and that it has a direct curative effect if injected after the development of the disease. Preliminary communications are at hand announcing the discovery of anti-toxines antidotal to tuberculosis and to rabies, and numerous ingenious experiments are constantly being made demonstrating that acquired immunity is due to the development of anti-toxines. Recently STERNBERG has demonstrated by proper experiments that the blood serum of calves immune by previous attacks of vaccinia to vaccine virus contains something which neutralizes humanized or bovine lymph.

These few lines, briefly touching the main landmarks in the development of the present knowledge of the toxines and anti-toxines of infectious diseases will serve to call attention to the revolution in treatment which these researches may bring about. The work of isolating anti-toxines, of testing their specific action in neutralizing the toxic products of specific diseases both before and after the development of the disease, and the task of producing anti-toxines in amounts sufficient and suitable for practical therapeutic use, will be carried on enthusiastically and unremittingly by investigators all over the world, each believing that when bacteriology discovered the anti-toxine a new era dawned in the history of medicine—the era of specific treatment of infectious diseases.

A PROPOSED CHANGE IN THE MEDICAL COURSE OF STUDY.

One of the most serious errors in our present course of medical study, as offered in the best four year institutions, lies in the presentation of too many subjects at a time. Time was when the medical school offered six studies and had six professors. During the first year the student had anatomy, physiology and materia medica, during the second year medicine, surgery and obstetrics. In fifteen years as many new branches have come into the curriculum, and yet in many schools six or more studies are required of the student coincidently during the crowded term of each year. From an educational standpoint, this is a grave error. Not more than four different branches should be required of a student at a time. The course of lectures and laboratory work should be divided into two portions for each year. The first portion should be given during the first half of the term, the second portion during the second half.

In this way the student could go about his work without confusion and yet with sufficient variety. At the end of the half course there should be a final examination and credit should be given for the work done. The quality of the work done would be bettered by the concentration both for the teacher and the student.

The course of study might be something like the following, remembering that each branch would receive *one* hour *a day* in recitations or lectures and *two* hours *a day* in laboratory work and clinics during seventy days.

FIRST YEAR, FIRST HALF.

1. Comparative anatomy, laboratory.
2. Chemistry, recitations.
3. Physics, recitations.
4. Physiology, recitations.

FIRST YEAR, SECOND HALF.

1. Histology, laboratory.
2. Chemistry, laboratory.
3. Human anatomy, recitations.

SECOND YEAR, FIRST HALF.

4. Human anatomy, recitations.
2. Human anatomy, laboratory.
3. Histology, laboratory.
4. Elective work.

SECOND YEAR, SECOND HALF.

1. Embryology, laboratory.
2. Human anatomy, laboratory.
3. Materia medica, recitations.
4. Elective work.

THIRD YEAR, FIRST HALF.

1. Pathology, general, laboratory.
2. Medical clinics.
3. Medicine, recitations and lectures.
4. Topographical anatomy and physical diagnosis, recitations.

THIRD YEAR, SECOND HALF.

1. Pathology, special, laboratory.
2. Surgical clinics.
3. Surgery, recitations and lectures.
4. Elective work.

FOURTH YEAR, FIRST HALF.

1. Two specialties, each one-half, lectures and recitations.
2. Clinics on specialties.
3. Clinical diagnosis, laboratory.
4. Thesis work.

FOURTH YEAR, SECOND HALF.

1. Two specialties, each one-half, lectures and recitations.
2. Operative surgery, laboratory.
3. Clinics on specialties.
4. Elective work.

This rude outline is enough to show what can be done. It might be well to offer this work twice a year in the larger schools, and in that way the capacity of the best located schools could be doubled.

Four of the eight groups could be given each spring, alternating from year to year; or better still, the school could continue the year through, and sufficient elective work offered to lengthen the term to nine months, These elective courses would be a means of medical culture for the undergraduate and would furnish an opportunity for post-graduate work.

The Southern Medical College Association.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

An editorial in your issue of December 10, 1892, in reference to the two Medical College Associations, does great injustice to the action of the Convention of the Southern Medical Colleges, which was recently called to meet and did meet, in Louisville, Ky., for the *sole purpose* of raising the standard of medical education in the South.

At a meeting of the Faculty of the Medical Departments of the University of Nashville, and Vanderbilt University, in August last, a committee was appointed to call a Convention of the Medical Colleges of the South for the purpose of raising the standard of medical education in the South. The call was made by circular letters mailed to the officers of every reputable Medical College in the South, and answers were received from all addressed (except one) warmly endorsing the movement and promising hearty coöperation.

The "sequestered" city of Louisville was named as the place of meeting, and the 16th of November last as the time for the meeting.

Every reputable medical college of the South, except one, was represented by either delegates or by letters.

Methods of instruction and requirements for matriculation, which differed in no essential particular from the plans and requirements of the American Medical College Associa-

tion, except in the educational requirements, were offered and adopted.

A large majority of those in attendance, while desiring as high a grade of literary qualification as could be attained, yet opposed the requirement of more than a good, substantial English education preliminary to matriculation. This difference in the requirements of preliminary education would, in the opinion of many of those present, deter a large number of medical colleges from becoming members of the American Medical College Association, and hence it was proposed to organize a Southern Medical College Association, provided three-fourths of the Southern Medical Colleges became members of that body.

Those present at the convention entered the Association with enthusiasm, and many others have since become members by letter, and in a short while every reputable medical school of the South will become members of the Association.

There is no valid reason why a college may not consistently be a member of both Associations, as they were both organized for the same purpose, viz.: the elevation of medical education, and there is no doubt that many of the colleges of the South will become members of the American Medical College Association at an early date.

The medical colleges South have determined to raise the standard of medical education to as high a point as the American Medical College Association will, it matters not how high this point is.

Below we insert the requirements in each Association side by side:

Requirements of the American Medical College Association.

SECTION 1. Members of this Association shall require of all matriculates an English composition in the hand-writing of the applicant of not less than two hundred words; an examination by a Committee of the Faculty, or other lawfully constituted Board of Examiners, in higher arithmetic, algebra, elementary physics and Latin prose.

SEC. 2. Graduates or matriculates of reputable colleges, or high schools of the first grade, or normal schools established by State authority, or those who may have successfully passed the entrance examination provided by the statutes of the State of New York, shall be exempt from the requirements of Section 1.

SEC. 3. Students conditioned in one or more of the branches enumerated as requirements for matriculation shall have time until the beginning of the second year to make up such deficiences, provided, however, that students who fail in any of the required branches in this second examination shall not be admitted to a second course.

SEC. 4. Colleges granting final examination on elementary subjects to junior students shall not issue certificates of such final examination, nor shall any member of this Association confer the degree of Doctor of Medicine upon any person who has not been first examined upon all the branches of the curriculum by the faculty of the college granting the degree.

SEC. 5. Candidates for the degree of Doctor of Medicine shall have attended three courses of graded instruction, of not less than six months each, in three separate years.

SEC. 6. Students who have matriculated in any regular medical college prior to July 1, 1892, shall be exempted from these requirements.

Requirements of the Southern Medical College Association.

Requirements for Matriculation.—Every student applying for matriculation must possess the following qualifications:

He must hold a certificate as the pupil of some known reputable physician, showing his moral character and general fitness to enter upon the study of medicine.

He must possess a diploma of graduation from some literary or scientific institution of learning, or certificate from some legally constituted high school, general superintendent of State education, or superintendent of some county board of public education, attesting the fact that he is possessed of at least the educational attainments required of second-grade teachers of public schools. Provided, however, that, if a student so applying is unable to furnish the above and foregoing evidence of literary qualifications, he may be permitted to matriculate and receive medical instruction as other students, and qualify himself in the required literary departments, and stand his required examination as above specified, prior to offering himself for a second course of lectures.

The foregoing diploma or certificate of educational qualifications, attested by the dean of the medical college attended, together with a set of tickets showing that the holder has attended one full course of medical lectures, shall be essential to attendance upon a second course of lectures in any college belonging to this Association.

Branches of Medical Science to be Included in Course of Instruction.—Anatomy, physiology, chemistry, materia medica and therapeutics, theory and practice of medicine, pathology, surgery, obstetrics and gynecology, hygiene, medical jurisprudence (forensic medicine), and special laboratory work as hereinafter provided.

Qualifications for Graduation.—Candidates for graduation, in addition to the usual requirements of medical colleges, must have attended three courses of lectures of not less than six months each, in three separate years; must have dissected in two courses, and attended two courses of clinical or hospital instruction; and must have attended one course in each of the special laboratory departments, to-wit: 1. Histology and Bacteriology; 2. Chemistry; 3. Operative Surgery.

These requirements shall not apply to any student who has received a course of medical lectures prior to September 1, 1893.

Yours, etc.,
W. T. BRIGGS.
G. C. SAVAGE.

HEALTH DEPARTMENT.

No. 301 MOTT ST.

NEW YORK, DECEMBER 13, 1892.

HON. CHAS. G. WILSON,
PRESIDENT HEALTH DEPARTMENT.

Sir:—I have the honor to submit the following report of the pathological and bacteriological work of this Department during the outbreak of cholera in this city which occurred during September of the present year.

In this work I secured the coöperation of Dr. Edward K. Dunham of the Carnegie laboratory, who has had large experience in biological work connected with Asiatic cholera at the Hygienic Institute in Berlin, and I desire to acknowledge here my great indebtedness to him for biological investigations in this connection.

As bearing upon what is to follow, I desire to direct attention to certain features in the diagnosis of Asiatic cholera. It is admitted by all clinicians of experience that a differential diagnosis between sporadic and Asiatic cholera cannot be made on the clinical history alone. In the absence of an epidemic of Asiatic cholera, or the proof of direct exposure to Asiatic cholera, no one is justified on the clinical history alone in making a diagnosis of this disease. In the beginning of an epidemic of Asiatic cholera the first cases are always doubtful cases, and often their true nature is not recognized until the disease has become epidemic.

It is not very unusual to see cases of sporadic cholera presenting the exact clinical picture which is presented in the severest types of epidemic cholera, and on the other hand, it has often been the testimony of all observers in the recent epidemic in Europe that frequently epidemic cholera takes such a mild form, and resembles so slightly the severest types of the disease, that any suspicion as to its nature would not be aroused, were it not for the existence of the epidemic or the results of biological examinations.

In 1884 the German Government sent a commission, of which Robert Koch was the head, to Italy, Egypt and India, to study Asiatic cholera, and to determine if possible its cause. A peculiar organism was found in the intestinal contents and in the intestinal discharges of cases of cholera, occurring in the epidemics in Italy and Egypt, and also in India, where the disease is endemic. This organism, because of its curved form, was originally called the cholera

comma bacillus, but is more properly called the cholera spirillum. Koch showed by his investigation that this organism was present almost in pure culture in the intestinal contents and in the intestinal discharges from cholera patients during the height of the disease, that it bore a definite relation to the course of the disease, appearing with severe symptoms and disappearing as severer manifestations passed away; that it was never found in any other disease, and that it might be cultivated in various substances outside of the living body.

Several other microörganisms were afterward described by other observers (one of which occurs in the human mouth, another in a form of sporadic cholera, a third in stale cheese), which resemble very closely in their morphological appearance the cholera spirillum. But when all the biological characteristics of these various organisms are considered, they can with great certainty and ease be differentiated from each other.

It is now admitted by all prominent bacteriologists of the world, so far as I am aware, that the spirillum of Koch is absolutely characteristic and pathognomonic of Asiatic cholera, and that its biological characteristics differentiate it with certainty from all other microörganisms. When this organism is found, the diagnosis does not remain longer a question of opinion, but becomes a scientific fact, regarding which there can be among competent observers no difference of opinion. To determine the nature of the organisms, however, it is necessary to not merely examine microscopically the intestinal contents or discharges, but to isolate and cultivate the spirillum in suitable media, and to study its characteristics. This process requires for the identification of the cholera spirillum in different cases, according to the conditions, from two to four days.

The second occasion in the history of cholera epidemics in any part of the world in which biological examinations were practically resorted to for the diagnosis and exclusion of this disease, was in the cholera epidemic, which occurred at the York Quarantine Station in 1887. Dr. William M. Smith, then Health officer, brought to me culture tubes inoculated from the intestinal contents of a child who had died with what had apparently been cholera morbus. The vessel from which the child had been removed, was supposed to be free from infection, although she had sailed from an infected port. Dr. Smith requested an opinion as to whether the disease which caused death was sporadic or epidemic cholera, and offered to hold the vessel until the question was determined. The examination by three independent observers (Dr. Prudden, Dr. Weeks and myself) showed at the end of forty-eight hours that the disease was Asiatic cholera. Four hundred immigrants were then removed from the vessel, and several days later a number of other cases occurred among them. Asiatic cholera was then only excluded from New York City by reason of the biological examinations.

In view of the above facts, the importance of biological examinations in the diagnosis of Asiatic cholera is, it seems to me, at once apparent.

The first case referred to me for investigation was that of a laborer, Chas. McAvoy, age 32, who died on September 7, after an illness of about thirty-six hours' duration. He had suffered from severe watery diarrhœa and vomiting, accompanied by persistent cramps in the abdomen and limbs,—collapse and death followed. This case was reported to the Health Department by physicians in attendance as probably one of Asiatic cholera.

At the autopsy, such lesions as may be found in cases of death from both sporadic and epidemic cholera were present. In the absence of any evidence of exposure to infection from epidemic cholera, and inasmuch as the microscopical examination of the intestinal contents was negative, and the anatomical lesions found in both sporadic and epidemic cholera may be so nearly identical as to make a differentiation on this ground impossible, the conclusion was reached, provisionally at least, that this was a case of sporadic cholera, and the cause of death was so returned to the Health department.

A biological examination, however, was immediately begun, and on the 10th of September the investigation had proceeded to such extent that it was considered certain that it was a case of epidemic cholera. Realizing very fully, however, how many and what important interests were at stake, an official report was not presented to the Health department until several days later, after the diagnosis had been confirmed by Dr. T. Mitchell Prudden, consulting physician to the Health department in the Division of Pathology, Bacteriology and Disinfection. A report was then forwarded to the department, correcting the original diagnosis, and reporting this as a case of epidemic or Asiatic cholera. During the month following this, nine other cases occurred in New York City, and one in New Brunswick, N. J., in which a diagnosis of Asiatic cholera was made, either on the ground of the biological examination, or, in two or three cases where no biological examinations were made, on the clinical history and the association of the patients with cases of Asiatic cholera. Twenty-four suspicious cases in all were examined biologically, in a number of instances repeated examinations being made.

Of the eleven cases of true epidemic cholera (including the New Brunswick case) nine died; among the others, which biological examination showed to be sporadic cholera, no deaths occurred. The clinical history in all the cases of true cholera was nearly the same, namely: vomiting, watery diarrhœa attended with severe cramps in the abdomen and legs, collapse, and in most cases death; the whole duration of the illness varying from six or eight hours to thirty-six hours, and in one instance to five days.

The material used for the biological examinations in most of the cases, which proved to be epidemic cholera, was obtained from the intestinal contents after death, as these cases, with one exception, occurred before or almost immediately after they were first seen by the Health Department Inspectors. In one case the intestinal discharges passed before death were examined, and in the suspiscious cases (which proved to be sporadic cholera) the intestinal contents were aiways the material submitted for examination. In one or two instances the material presented for examination was in the form of soiled clothing. The results of the biological examinations in all the cases of epidemic cholera were identical, the same microörganism (the cholera spirillum) showing the same biological characteristics in all respects, was found. In some of the cases the cholera spirillum formed more than 90 per cent of all the microorganisms present in the intestinal contents.

The anatomical lesions and postmortem appearances in all of the cases were the same, and are so striking and so unusual in autopsies in this latitude, as to constitute in themselves strong but insufficient ground for a diagnosis.

The cultures from several of the latter cases before an official report was forwarded to the Health Department, were examined at my request by Dr. T. Mitchell Prudden, and Dr. Henry P. Loomis, and the diagnosis was confirmed by them, and their names were appended to the reports. After several cases had occurred, that there might be ample confirmation of the original diagnosis, cultures were sent to Dr. Harold Ernst, Professor of Bacteriology in the Harvard Medical School; to Dr. George M. Sternberg, Deputy Surgeon General of the United States Army (who, during the epidemic, at the suggestion of the Advisory Committee of the Chamber of Commerce, and at the request of Dr.

Jenkins, was detailed as Consulting Bacteriologist to the New York Quarantine Station); Dr. J. M. Byron, Director of the Bacteriological Division of the Loomis Laboratory (who, during the epidemic, was placed by Dr. Jenkins in charge of the hospital at Swinburne Island); Dr. Wm. M. Welch, Professor of Pathology in the Johns Hopkins University, Baltimore; and to Dr. Petri, Chief of the Bacteriological Department of the Imperial Board of Health, Germany. The identity of the organisms found in these cases with that of the cholera spirillum of Koch, was confirmed by all of these observers, and, furthermore, Drs. Byron and Sternberg confirmed the identity of these organisms with those found in the cases that occurred on the cholera infected vessels and on Swinburne Island. Unusual precautions were taken in this matter, that there might be no possibility of doubt as to the nature of the disease with which we had to deal.

The postmortem appearances and the anatomical lesions in the cases of Asiatic cholera, eight in number, in which autopsies were performed, were very striking and were practically indentical. The face had a peculiar drawn expression, the cheeks and eyes were much sunken, and the cheek bones were very prominent. The extremities of the nose, fingers and toes were shriveled and often cyanosed. The extremities (arms and legs) were semi-flexed, with the toes drawn under and the fingers clenched, rigor mortis was very much marked, and in some cases the temperature postmortem remained high for some hours. On opening the abdomen, the coils of intestines presented a peculiar rosy tint, which was especially marked in the coils of the ileum. The small intestines especially were, as a rule, markedly distended with fluid contents. All of the parenchymatous organs showed cloudy swelling and appeared congested. The brain and its membranes were also congested. The blood everywhere was fluid, or showed only a few soft, dark clots.

The mucus membranes of the stomach and intestines presented few changes to the naked eye, excepting marked prominence and swelling of the patches of Peyer and the solitary follicles in the lower part of the ileum. The intestinal contents showed in all cases a striking absence of biliary coloring matter, or anything resembling ordinary fæces. The intestinal contents were usually large in amount, had a gruel-like consistency, and a slightly pinkish hue. If placed in a vessel and allowed to stand some hours, a white sediment formed, leaving an almost clear supernatent fluid having a pink tinge. The sediment was found on microscopical examination to be made up largely of desquamated epithelial cells from the mucus membrane, mucus, microörganisms, and granular detritus.

The bladder was usually empty. In a few cases there was a marked peculiar dryness of all the organs.

The postmortem appearances and the anatomical lesions, together with the absence of any sufficient anatomical cause for death, produce a picture that is unlike that seen in any other disease, excepting those comparatively rare cases of sporadic cholera, which present the same clinical histories.

In my annual report to this department, I shall give a description of the method employed in the biological diagnosis of Asiatic cholera.

A table is appended giving the important data regarding the specimens which were examined bacteriologically.

Copies of the letters received from the different bacteriologists who have examined the cultures, are also appended. Respectfully submitted,

(Signed) HERMAN M. BIGGS,
Chief Inspector,
Division of Pathology, Bacteriology and Disinfection.

BACTERIOLOGICAL EXAMINATIONS IN SUSPECTED CHOLERA CASES, SEPTEMBER AND OCTOBER, 1892.

Number.	Sample Received.	Character of Sample.	Direct Microscopical Examination.	Culture Results.	Rel. Prop. of Cholera Bacilla to Total No. of Bacteria.	Results Reported.	Remarks.
1	Sept. 7	Intestinal contents	Inconclusive	Cholera	About 20 per cent.	Sept. 13	Died Sept. 7.
2	Sept. 9	" "	" "	Not cholera		Sept. 11	Autopsy by Dr. H. P. Loomis, who reported death as due to meningitis.
3	Sept. 11	Cloth stained with dejecta	Negative	" "		Sept. 14	Died Sept. 10.
4	Sept. 11	Intestinal contents	"	Prob'y cholera		Sept. 14	Body had been embalmed before autopsy. Report based on next case (No. 5).
5	Sept 12	Dejecta	Cholera spirillum present.	Cholera	About 100 per cent	Sept. 14	Died Sept. 11. Wife of Wm. Wiegmann (No. 4).
6	Sept. 12	Intestinal contents	Inconclusive	"	Abundant	Sept. 14	Died Sept. 11.
7	Sept. 14	" "	" "	"		Sept. 16	Died Sept. 13.
8	Sept. 15	Vomit	" "	Not cholera		Sept. 17	
9	Sept. 15	Cloth stained with dejecta	Negative	"		Sept. 17	
10	Sept. 19	Dejecta		Cholera		Sept. .	Died Sept. 23.
11	Sept. 19	Cotton and clothing soaked in dejecta and dirty water	Not made	" "		Sept. .	Died Sept. 18. Examination made at request of authorities of New Brunswick, N. J.
12	Sept. 19	Intestinal contents	Inconclusive	"		Sept. .	Died Sept. 18. Stoker on S. S. Nevada.
13	Sept. 21	Dejecta	Not made	Not cholera		Sept. 23	
14	Sept. 21	Vomit	"	" "		Sept. 23	
15	Sept. 21	Dejecta	"	" "		Sept. 24	
16	Sept. 21	"	"	" "		Sept. 24	
17	Sept. 21	Intestinal contents	"	" "		Sept. 23	
18	Sept. 22	Dejecta	"	" "		Sept. 24	Second sample, case No. 16.
19	Sept. 22	"	"	" "		Sept. 24	Second sample, case No. 15.
20	Sept. 23	"	"	" "		Sept. 24	Second sample, case No. 13.
21	Sept. 26	"	"	" "		Sept. 30	
22	Sept. 26	"	"	" "		Sept. 30	
23	Sept. 28	"	"	" "		Sept. 30	Second sample, case No. 22.
24	Sept. 28	"	"	" "		Sept. 30	
25	Sept. 28	"	Inconclusive	Cholera	About 30 per cent.	Oct. 1	Died Sept. 29.
26	Sept. 29	Intestinal contents	" "	" "	About 88 per cent.	Oct. 1	Died Sept. 29. Second sample, case No. 25.
27	Oct. 4	Cloth soaked with dejecta	Not made	Not cholera		Oct. 8	
28	Oct. 5	Stomach contents	"	" "		Oct. 8	Second sample, case No. 27.
29	Oct. 5	Intestinal contents	"	" "		Oct. 8	Third sample, case No. 27.
30	Oct. 7	" "	"	" "		Oct. 9	
31	Oct. 7	Stomach contents	"	" "		Oct. 9	

CLEVELAND, O., Dec. 1, 1892.

HON. TOM. L. JOHNSON AND HON. V. A. TAYLOR, MEMBERS OF CONGRESS FROM THE 20TH AND 21ST DISTRICTS OF OHIO.

Gentlemen:—The dangers to be apprehended the coming year from cholera, and every year from yellow and typhus fevers, and other fatal diseases which may be imported from abroad, are such as to cause all good citizens anxious concern. The magnitude of the work of guarding our National frontiers against the importation of infectious and contag-

ious diseases, the efficiency of quarantine if thoroughly and properly applied, the fact that the people in the interior are no less interested than those upon the borders of the country, and the further fact that the States acting separately are unable to properly establish and enforce efficient quarantine; all these considerations point to the conclusion that the general government should assume control of coast and border quarantine. The present organization and equipment of the Marine Hospital service and the excellent work heretofore done by that service are evidence, in our opinion, that the Marine Hospital Corps is amply able to enforce quarantine if its powers are sufficiently enlarged and adequate funds are placed at its command. Neither the present powers of the Marine hospital service, as we understand them, nor such appropriations as have heretofore been made are at all adequate to meet the present emergency. We, therefore, your constituents and members of the Cuyahoga County Medical Society most earnestly request you to use your utmost endeavors to secure action by Congress early in the present session upon the matters herein set forth. To accomplish the desired ends of such legislation early action by Congress is a necessity in order that time may be given to prepare for the work. In thus urging National Quarantine we do not fail to recognize the efficient work of the Health authorities of New York City during the present year. Indeed the success of local quarantine at the Port of New York and other sea-ports but emphasizes the need of National quarantine to the end that all points upon our borders may be guarded with equal efficiency, and, as this is a matter which concerns the whole country, it is but just that the whole country should bear the burden of expense. We would also urge upon your attention at this time the obvious fact that preventive medicine is so related to internal conditions and to foreign immigration—in short, to the "general welfare" and is of such importance, magnitude and dignity that the general government should no longer neglect to give it proper recognition. Either the powers of the Marine Hospital Service should be so enlarged as to meet the requirements, or a Department of Public Health should be established and ample means provided to enable such department to perform its legitimate duties.

We earnestly hope that the views above set forth may coincide with your own and that you may earn the lasting gratitude of your constitutents and of the whole country by pushing forward the cause of public health.

Rspectfully submitted,

W. J. SCOTT, M.D.
W. A. KNOWLTON, M.D., } *Committee.*
L. B. TUCKERMAN, M.D.

ISAAC V. HIMES, M.D., *President.*
JULIUS WOLFENSTEIN, M.D., *Secretary.*

MISCELLANY.

DR. RICHARD H. DAY died at Baton Rouge, La., December 4, 1892. He was born at Bladensburg, Md., June 9. 1813.

AT the annual "business meeting" of the Washington Obstetrical and Gynecological Society, held Oct. 21, 1892, the following officers were elected for the ensuing year: President, Dr. D. W. Prentice; vice-presidents, Dr. H. L. E. Johnson, Dr. H. D. Fry; recording secretary, Dr. G. Wylie Cook; treasurer, Dr. Geo. Byrd Harrison; corresponding secretary, Dr. W. Sinclair Bowen.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from December 10, 1892, to December 16, 1892.

Lieut.-Col. William D. Wolverton, Deputy Surgeon-General U. S. A. is relieved from duty at Ft. Schuyler, N. Y., and will report in person to the commanding officer, Watervliet Arsenal, West Troy, N. Y., for duty at that arsenal.

First Lieut. Charles Willcox, upon the recommendation of the Medical Dept. of California, will report to the commanding officer, Presidio of San Francisco, for temporary duty at that post, until the departure from Angel Island, Cal., of Major William H. Gardner, Surgeon, when he will proceed to Angel Island, and report to the commanding officer of that post for temporary duty.

Capt. Adrian S. Polhemus, Asst Surgeon U. S. A., is hereby granted leave of absence for two weeks on surgeon's certificate of disability, with permission to apply for an extension of two weeks.

OFFICIAL LIST OF CHANGES in the Medical Corps of the U. S. Navy, for the Week Ending December 17, 1892.

P. A. Surgeon E. R. Stitt, from receiving ship "Franklin" and to hospital, Norfolk, Va.

P. A. Surgeon J. F. Keeny, from Naval Hospital, New York, and to the U. S. S. "Ranger."

P. A. Surgeon T. A. Berryhill, from U. S. S. "Ranger" and to the Fish Com. Str. "Albatross."

P. A. Surgeon F. W. F. Wieber, from the Fish Com. Str. "Albatross" and granted one month's leave.

Asst. Surgeon G. T. Smith, from Coast Survey Str. "Hassler," proceed home and wait orders.

Asst. Surgeon F. G. Brathwaite, from the U. S. S. "Fern" and to the U. S. S. "Chicago."

Asst. Surgeon J. S. Hope, from the receiving ship "Franklin" and to the U. S. S. "Fern."

Asst. Surgeon J. M. Whitfield, from the U. S. S. "Chicago" and granted one month's leave.

OFFICIAL LIST OF CHANGES of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the eight weeks ended December 10, 1892.

Surgeon George Purviance, detailed as chairman of Board to consider changes in uniform. December 6, 1892.

Surgeon W. H. H. Hutton, relieved from duty at Cape Charles Quarantine, to rejoin station. November 29, 1892.

Surgeon John B. Hamilton, granted leave of absence for six days. November 18, 1892.

Surgeon H. W. Sawtelle, granted leave of absence for seven days. November 9, 1892.

Surgeon H. W. Austin, detailed as member of Board to consider changes in uniform. December 6, 1892.

Surgeon G. W. Stoner, granted leave of absence for fourteen days. December 9, 1892.

Surgeon John Godfrey, to proceed to the City of Mexico on special duty. November 22, 1892.

Surgeon Fairfax Irwin, to proceed to Europe on special duty. November 22, 1892.

Surgeon F. W. Mead, detailed as recorder of Board to consider changes in uniform. December 6, 1892.

Surgeon H. R. Carter, relieved from duty at Cape Charles Quarantine, to rejoin station, October 20, 1892. Relieved from duty at Cincinnati, O.; assigned to duty at Norfolk, Va. October 26, 1892.

P. A. Surgeon C. E. Banks, granted leave of absence for fifteen days. October 24, 1892.

P. A. Surgeon A. H. Glennan, granted leave of absence for thirty days. October 26, 1892.

P. A. Surgeon W. D. Bratton, granted leave of absence for thirty days. November 10, 1892.

P. A. Surgeon J. O. Cobb, granted leave of absence for six teen days. December 7, 1892.

P. A. Surgeon G. M. Guiteras, relieved from duty at Gulf Qurantine, assigned to temporary duty at Balitmore, Md. December 1, 1892.

P. A. Surgeon H. D. Geddings, to report in Washington, D. C., for special temporary duty. November 30, 1892.

Asst. Surgeon S. H. Hussey, to proceed to South Atlantic Quarantine for temporary duty. October 26, 1892.

Asst. Surgeon J. C. Perry, when relieved at Norfolk, Va., to rejoin station at Mobile, Ala. October 26, 1892.

Asst. Surgeon G. B. Young, granted leave of absence for twenty-one days. October 27, 1892.

Asst. Surgeon W. G. Stimpson, to proceed to Baltimore, Md., for temporary duty. December 5, 1892.

Asst. Surgeon C. H. Gardner, ordered to Portland, Or., for temporary duty. October 25, 1892.

Asst. Surgeon J. A. Nydegger, to proceed to Gulf Quarantine for temporary duty. December 1, 1892.

Asst. Surgeon Edgar Strayer, detailed as inspector of immigrants, port of Boston, Mass. November 22, 1892.